LIBRARY

[redacted]

OF

[redacted]



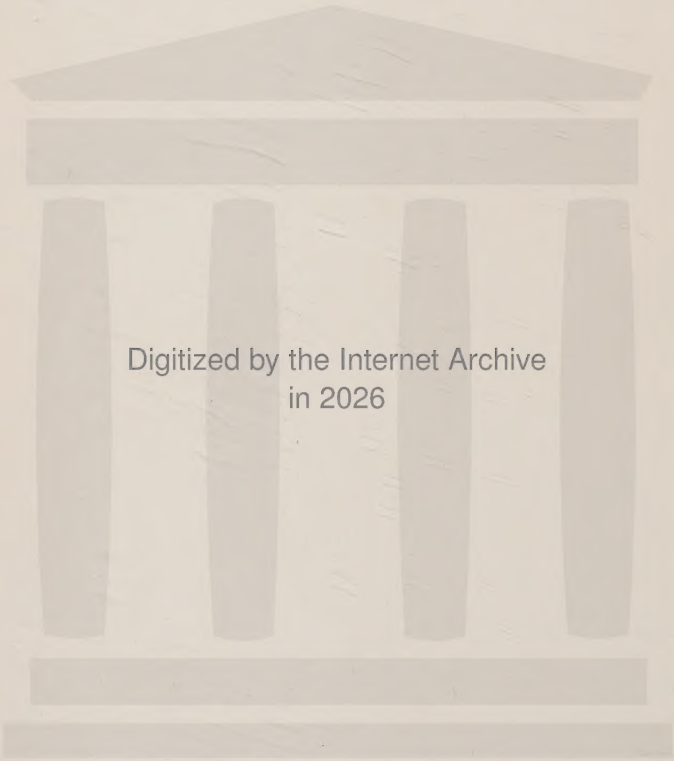
STACK

[redacted]

ESSION 110392

STACK

Russell Weisman


Digitized by the Internet Archive
in 2026

https://archive.org/details/discountpolicyof0000benj_l3o3

American Business Series

GENERAL EDITOR

ROSWELL C. McCREA

Professor of Economics in Columbia University

American Business Series

Under the Editorship of
ROSWELL C. McCREA, *Columbia University*

Ready:

Economic History of the United States
By T. W. Van Metre, Columbia University

Business Ownership Organization
By Archibald H. Stockder, Columbia University

The Shoe Industry
By Frederick J. Allen, Harvard University

The Transportation Act — 1920
By Rogers MacVeagh, of the New York and Oregon Bars

Our Competitors and Markets: An Introduction to Foreign Trade
By A. W. Lahee

Outlines of Accounting
By W. S. Krebs, Washington University, St. Louis

Making Use of a Bank
By J. A. Fitzgerald, Ohio State University

Manpower in Industry
By E. S. Cowdrick

The Discount Policy of the Federal Reserve System
By B. H. Beckhart, Columbia University

In preparation:

Business Economics
By Ray B. Westerfield, Yale University

Statistical Methods
By Frederick C. Mills, Columbia University

Money and Banking
By William H. Steiner, College of the City of New York

Our Financial Reformation
By C. A. Philips, University of Iowa

German Trade Associations: The Coal Kartell
By Archibald H. Stockder, Columbia University

International Trade Finance
By George W. Edwards, Ph.D., New York University

THE DISCOUNT POLICY
OF THE
FEDERAL RESERVE SYSTEM

BY

BENJAMIN HAGGOTT BECKHART, M.A.

Assistant Professor of Banking, School of Business, Columbia University

STACK



NEW YORK

HENRY HOLT AND COMPANY

HG2562
.D5B4

STACK
111392

COPYRIGHT, 1924

BY

HENRY HOLT AND COMPANY

June, 1924

PRINTED IN THE UNITED STATES OF AMERICA

To
H. P. W.

PREFACE

The paucity of books in English bearing on the functions and purpose of the Bank rate, as well as the lack of material covering the history of credit control in America, convinced the author that there was need for a book on this topic.

This work really divides itself into two parts. The first embraces Chapters I and II which treat of the experiences of central banks in Europe in the administration of the Bank rate. These it was felt desirable to include in order to afford a background for a study of the policies of the Reserve System. The remainder of the book is devoted to a discussion of the efforts made to exercise control over credit in the United States.

During the greater part of the life of the Reserve System events, economic and otherwise, have transpired with kaleidoscopic rapidity. Even before the Regional Banks were opened, the Federal Reserve Board was compelled to face a number of problems arising from the outbreak of the Great War. Upon America's entrance into the conflict the System was of course called upon to assist in war financing. The armistice did not bring a cessation to the use of its discount facilities for it was followed by an era of inflation unprecedented in the history of the United States. Succeeding this there ensued a period of swiftly falling prices. While the actual life of the Reserve Banks has been very short it has been one rich in experience. Because of this, and because of the relative inactivity of discount operations at the present moment, this seems a peculiarly fit time to evaluate the credit policies of the System.

In the course of preparing this work the author has been generously assisted by various persons and institutions whose aid he desires to acknowledge. Needless to say the author alone is responsible for expressions of opinion.

First of all the author wishes to express his gratitude to H. Parker Willis, Professor of Banking, Columbia University, who has been a constant source of inspiration and a veritable mine of information.

Roswell C. McCrea, Hepburn Professor of Economics in Columbia University, and Editor of the American Business Series,

in which this volume appears, has read the entire manuscript with the greatest care, has offered many suggestions and has taken a most kindly interest in the entire work.

The author carried on his research work for the most part in the Economics Room of the New York Public Library and in the Library of the Federal Reserve Bank of New York. Without the cordial assistance which was rendered by both institutions the work could never have been carried to completion.

The Reports Department of the Federal Reserve Bank of New York rendered invaluable assistance through its kindness in furnishing statistical data.

The author is deeply indebted to the following for constructive suggestions and criticisms: Dr. William Randolph Burgess, assistant Federal Reserve Agent, Federal Reserve Bank of New York; C. H. Crennan, Economist, Continental and Commercial National Bank, Chicago; W. F. Crick, of the Intelligence Department of the London Joint City and Midland Bank, Ltd.; E. O. Douglas, of the Bill Department of the Federal Reserve Bank of New York; Pierre Jay, Federal Reserve Agent and Chairman of the Board, Federal Reserve Bank of New York; E. W. Kemmerer, Professor of Economics and Finance, Princeton University; Morgan Rice, of the Federal Reserve Bank of Dallas; J. H. Riddle, Chief of the Section of Statistics, Treasury Department of the United States; Carl Snyder, Statistician General of the Federal Reserve Bank of New York; W. H. Steiner, Assistant-Professor of Economics, College of the City of New York; and Willard L. Thorp of the National Bureau of Economic Research.

Thanks are due to the Federal Reserve Board, the Federal Reserve Banks, the Treasury Department and the office of the Comptroller of the Currency for the courtesies which they have shown in replying to the author's inquiries.

More than to any one else the author is indebted to Miss Margaret G. Myers. She has prepared all the charts and has had general supervision of the statistical work. In addition she has read the manuscript with the greatest care and with searching criticism. With her assistance and aid the work of preparing this volume has been infinitely lightened.

B. H. Beckhart.

School of Business,
Columbia University,

New York City,

TABLE OF CONTENTS

CHAPTER		PAGE
I.	The Origin of the Modern Concept of the Functions of the Bank Rate	1
II.	The Administration of the Bank Rate in England, Germany and France	30
III.	The Origins of Credit Control in the United States	99
IV.	Provisions in the Federal Reserve Act Governing the Bank Rate, the Rediscount and Open-Market Operations of the System	130
V.	The Pre-War Discount Policy of the Federal Reserve System	176
VI.	War Financing	249
VII.	Post-War Inflation	314
VIII.	Deflation	381
IX.	Retrospect and Prospect	509
	Appendix A Bibliography	539
	Appendix B (an abstract of) The Baltimore Plan	578
	Carlisle's Plan	578
	Plan of the Indianapolis Monetary Commission	580
	Fowler Bill of January 8, 1908	581
	Aldrich Bill of January 7, 1908	581
	Vreeland Bill of May 14, 1908	583
	Aldrich-Vreeland Act of May 30, 1908	583
	Index	587

LIST OF CHARTS

NUMBER		PAGE
I.	Fluctuations in the Note Circulation, Discounts and Gold Reserve of the Bank of England	4
II.	Fluctuations in British Wholesale Prices and Fluctuations in London Exchange on Hamburg	7
III.	Fluctuations in the Average Bank Rate at the Bank of England, the Bank of France and the Reichsbank	38
IV.	Spread between the Maximum and Minimum Bank Rates each Year at the Bank of England, the Bank of France and the Reichsbank	44
V.	Fluctuations in Reserve Percentages and in Bank Rates at the Bank of England, the Bank of France and the Reichsbank	48
VI.	Seasonal Variation of Berlin Exchange on New York	50
VII.	Fluctuations in the Bank Rate and Wholesale Prices in England	83
VIII.	Fluctuations in Bank Rates and in Market Rates in Paris and Berlin	84
IX.	Seasonal Variations in the Reserves, Note Circulation, Bank and Market Rates in England, 1845–1854	90
X.	Seasonal Variations in the Reserves, Note Circulation, Market and Bank Rates in England, 1899–1913	91
XI.	Seasonal Variations in the Note Circulation, Market and Bank Rates in Germany, 1899–1913	93
XII.	Seasonal Variations in the Note Circulation, and in the Bank and Market Rates in France, 1899–1913	95
XIII.	Variations in Bank Rate at the Federal Reserve Bank of New York Compared with Variations in Market Rate, 1914–1917	203
XIV.	Variations in Rate of Issue for Certicates of Indebtedness Compared with the Bank Rate at the Federal	

LIST OF CHARTS

NUMBER		PAGE
I.	Fluctuations in the Note Circulation, Discounts and Gold Reserve of the Bank of England	4
II.	Fluctuations in British Wholesale Prices and Fluctuations in London Exchange on Hamburg	7
III.	Fluctuations in the Average Bank Rate at the Bank of England, the Bank of France and the Reichsbank	38
IV.	Spread between the Maximum and Minimum Bank Rates each Year at the Bank of England, the Bank of France and the Reichsbank	44
V.	Fluctuations in Reserve Percentages and in Bank Rates at the Bank of England, the Bank of France and the Reichsbank	48
VI.	Seasonal Variation of Berlin Exchange on New York	50
VII.	Fluctuations in the Bank Rate and Wholesale Prices in England	83
VIII.	Fluctuations in Bank Rates and in Market Rates in Paris and Berlin	84
IX.	Seasonal Variations in the Reserves, Note Circulation, Bank and Market Rates in England, 1845–1854	90
X.	Seasonal Variations in the Reserves, Note Circulation, Market and Bank Rates in England, 1899–1913	91
XI.	Seasonal Variations in the Note Circulation, Market and Bank Rates in Germany, 1899–1913	93
XII.	Seasonal Variations in the Note Circulation, and in the Bank and Market Rates in France, 1899–1913	95
XIII.	Variations in Bank Rate at the Federal Reserve Bank of New York Compared with Variations in Market Rate, 1914–1917	203
XIV.	Variations in Rate of Issue for Certicates of Indebtedness Compared with the Bank Rate at the Federal	

NUMBER		PAGE
	Reserve Bank of New York on Advances Collateralled by Certificates of Indebtedness, 1917–1918	279
XV.	Fluctuations in the Bank Rate at the Federal Reserve Bank of New York Compared with Fluctuations in Market Rates, 1917–1918	280
XVI.	Fluctuations in the Bank Rate at the Bank of England Compared with Fluctuations in the Market Rate, 1917–1918	281
XVII.	Variations in Bank Rates in England, Japan, Italy, and France, 1914–1918	282
XVIII.	Number of Member Banks Rediscounting Compared with Total Number of Member Banks, 1917–1918	296
XIX.	Fluctuations in the Index Numbers of the Prices of 573 Controlled Commodities Compared with Fluctuations in the Prices of 793 Uncontrolled Commodities	304
XX.	Fluctuations of the Bank Rates in New York and Chicago Compared with Fluctuations in Market Rates, 1919–1920	324
XXI.	Fluctuations in the Bank Rate on Ninety-day Commercial Paper at the Federal Reserve Bank of New York Compared with Fluctuations in Market Rates of Interest, 1920–1923	391
XXII.	Fluctuations in the Bank Rates at the Federal Reserve Bank of New York on Paper Collateralled by Government Obligations Compared with the Yield of those Obligations, 1920–1923	392
XXIII.	A Comparison of the Average Earnings on Bankers' Bills Purchased by the Reserve Banks with the Market Rates on Bankers' Bills, 1920–1923	393
XXIV.	Fluctuations in the Loans and Investments of Member Banks (Including Rediscounts with the Reserve Banks, Compared with the Fluctuations in the Earning Assets of all the Reserve Banks,) 1919–1923	453

The Discount Policy of the Federal Reserve System

CHAPTER I

THE ORIGIN OF THE MODERN CONCEPT OF THE FUNCTIONS OF THE BANK RATE

From the time that the charter of the Second Bank of the United States expired in 1836 until the passage of the Federal Reserve Act, America was without a central bank which would hold the major portion of the gold stock of the country as well as the reserves of commercial banks and which would exercise some degree of restraint over credit expansions. Though all the important nations had established such institutions America struggled along with a most defective banking system, if system indeed it may be termed, consisting of thousands of independent banks each concerned primarily with its own welfare. It was the lack of a controlling institution which made America known as an international financial nuisance and it was the need for such an agency which led to the passage of the Reserve Act.

The short space of nine years, during which the Reserve System has been in operation has been one of the most eventful in the history of mankind. In this period there occurred the greatest of wars, precipitating in every nation whole series of far-reaching economic events. The events which have occurred and the problems which have arisen have initiated many a controversy as to the purpose, scope and effect of the Bank rate, as regards its relation to prices, to the foreign exchanges and to the business cycle. It would be presumptuous to undertake the task of settling once and for all the many points in connection with the Bank rate which are subjects of dispute among economists. Little more can be done than to study in as impartial a manner as possible the consequences of discount policies in Europe and America and to present rather than to solve problems.

It is to Europe and particularly to England that we must turn for a study of the effects of the Bank rate and discount policies.

It is there that central banking has had its longest development, that the social significance and functions of the Bank rate were first recognized and understood. It is there that central banks first developed discount policies.

Meaning of the Term "Discount Policy." The term "discount policy" embraces a good deal more than the mere principles in accordance with which a central bank acts in the raising and the lowering of its rates of discount. It includes the type of paper eligible for discount, the type of collateral which a central bank will accept against advances, and the various methods it employs to protect its gold reserve. The fact that a central bank has been able to develop a discount policy presupposes that it has a virtual monopoly of the note-issue function of the country, that it holds the ultimate banking reserve and that there exists in the financial center of the nation a fairly important discount market.

The Origin of Discount Policies. The principles which most economists feel should govern the discount policies of central banks had their origin in England, as might well be expected, for she was the first among modern nations to develop a credit economy. They were evolved as a consequence of the monetary and banking experiences through which the Bank of England passed during the Napoleonic wars, when cash payments were suspended, and during the crises of 1825, 1836, 1839, and 1847. Other central banks have simply adopted, with modifications to suit local conditions, the discount policies which the Bank of England found to be sound during this period. A knowledge of the problems which confronted the Bank of England and of her efforts at their solution is indispensable as an aid in solving the many questions which vex central bankers at the present time. The problems which the Federal Reserve System and other central reserve holding banks have had to face in the last few years are by no means novel. In reality they are hoary with age, the same problems with which, in a different guise, the Bank of England struggled decades ago.

The Suspension of Specie Payments, 1797. It was inevitable that the Bank of England, which had been founded in 1694 to act as a fiscal agent of the British Government, would be expected to assist in the financing of the allied cause during the Napoleonic wars. In fact, from the outbreak of the war, William Pitt, the Prime Minister, forced the Bank, which possessed huge gold reserves, to make larger and larger extensions of credit to the government. From 1793 on the Bank waged a losing fight

to maintain specie payments. By 1797, Pitt's policy, coupled with the panic conditions then prevailing throughout England due to the fear of a French invasion, rendered the continuance of cash payments impossible, and forced the directors to request the Cabinet to sanction a suspension.[1] This was effected through the issuance of an Order in Council by the Cabinet on the 26th of February, 1797.[2] The following day for the first time in its history the Bank completely suspended cash payments.[3]

The Restriction Act. Both Houses of Parliament immediately appointed Committees to inquire into the condition of the Bank and the necessity for the suspension. The Committee from the House of Commons presented their report on March 3, in which they stated that the total liabilities of the Bank on the 25th of February were £13,770,390 and that the total assets amounted to £17,597,280,[4] of which, however, £10,000,000 were in the form of loans to the Government which could not be called. By reason of the unliquid condition of the Bank, both Committees reported that the suspension of payments should be continued for a limited time. A bill for that purpose was accordingly brought in. The following are the chief provisions of the restriction act, which was passed on May 3, 1797:

1. The Bank was forbidden to make any payments in cash to any of its creditors, or to use cash for any payments except to the Army and Navy, or in pursuance of an order from the Privy Council.
2. The Bank might make no advance above £600,000 for the public service, in cash or notes, during the restriction.

[1] For a detailed account of the causes leading to the suspension see Macleod, *The Theory and Practice of Banking*, Volume II, pp. 77–92, and Aretz, *Die Entwicklung der Diskontpolitik der Bank von England*, pp. 17–50.

[2] The Order in Council issued by the Cabinet is printed in full in Gilbart, *The Principles and Practice of Banking*, p. 34.

[3] On this same day, the 27th of February, a meeting of 4000 merchants, bankers and other prominent citizens of London was held, with the Lord Mayor presiding, which unanimously adopted the following resolution for the purpose of giving support to the irredeemable notes: "That we, the undersigned, being highly sensible how necessary the preservation of public credit is at this time, do most readily declare, that we will not refuse to receive bank notes in payment of any sum of money to be paid to us, and we will use our utmost endeavors to make all payments in the same manner." Gilbart, pp. 34 and 35. No longer compelled to redeem its notes in cash the Bank began to discount liberally and within a week had increased its issue by nearly £2,000,000. See Macleod, Volume II, p. 93.

[4] Andréadès, p. 199.

3. The payment of debts in notes of the Bank of England was to be deemed payment in cash, if offered and accepted as such.
4. The notes were to be receivable at par by all public offices in payment of taxes.
5. The act was to continue in force until June 24, 1797.[5]

Excepting for a partial resumption in 1817, the notes of the Bank of England remained inconvertible from 1797 to 1821.[6] The period of suspension lasting for twenty-four years may logically be divided into two parts: the first extending until 1809 and the second including the remaining twelve years.

Up to 1809 the Notes of the Bank of England Did Not Materially Depreciate. The notes of the Bank, as will be observed in the accompanying chart, increased but slightly from 1802 to 1809.[7]

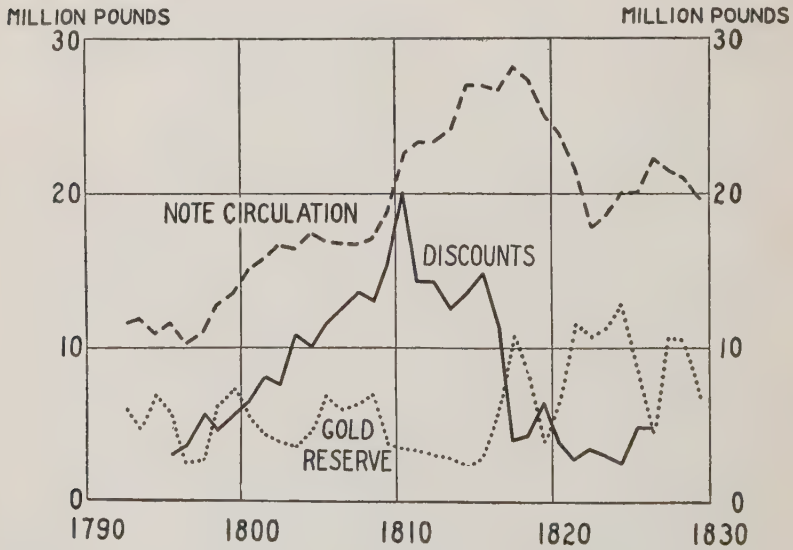


CHART I: FLUCTUATIONS IN THE NOTE CIRCULATION, DISCOUNTS AND GOLD RESERVE OF THE BANK OF ENGLAND.

[5] The restriction act was extended by additional acts passed on June 22, and November 30, 1797; July 5, 1816; and July 5, 1818; and by one passed during 1819; so that the Bank was not legally required to resume specie payments until 1823 although it actually did so in 1821.

[6] Though they had been accorded a very privileged position by the act of 1797, the Bank notes were not given the legal tender quality.

[7] Source of data for charts I and II: Silberling, *British Financial Experience, 1790–1830*, an article published in the *Review of Economic Statistics* (Harvard), for October, 1919, pp. 289, 291 and 293.

Explanation of the Moderate Issues. It was due to two factors that the notes of the Bank during this period were not issued in excess. In the first place, the Government radically changed its policy and refrained from using the Bank as a means of financing the war as had been the case from 1793 to 1797; and second, as the Bank rate ruled above the market rate through these years,[8] merchants and bankers did not find it as profitable as they did later, to discount their bills at the Bank.

Pitt fortunately became fully conscious of the mistake he had made before 1797 in misusing the Bank's credit; and he no longer demanded that the printing presses pay for the war. "His was not a nature to be obstinate when once he had realized a mistake, nor to profit by the Restriction Act to obtain artificial resources. He knew too much of the disadvantages of paper money to indulge in excessive issues and thus convert the Bank of England notes into common assignats." [9]

In addition to the refusal of Pitt to use the Bank as a source of "revenue," the height of the Bank rate aided in saving England during the earlier period from the evils of inflation. Since May 1, 1746, the Bank rate had stood at 5% on first class bills founded on a real transaction. On such bills, 5% was a high rate of discount, and until 1809 well above the rates in the open market. The commercial classes, therefore, did not find it advantageous to discount their bills at the Bank, nor the general bankers to rediscount their portfolio and consequently the issues of the "Old Lady of Threadneedle Street" were quite moderate. It must not be thought that the directors of the Bank, foreseeing the effect of an overissue of notes on domestic prices and the foreign exchanges, purposely maintained a rate of discount above those prevailing in the open market. Such was not the case. They had the most hazy and inaccurate ideas of the relationships existing between money and prices. Inflation was prevented through their adherence to the age-long practice of discounting all bills at 5%, rather than through any knowledge of the principles by which the issues of the Bank should be regulated.[10] So long, then, as the market rate chanced to rule below the Bank rate, the Bank discounted but little for the commercial classes;

[8] See *Review of Economic Statistics* (Harvard), for October, 1919, pp. 292–293.

[9] Andréadès, p. 207.

[10] This idea was expressed by Dr. Sivers in an article entitled, *Beitrag zur Geschichte der Theorie des Disconts*, published in Jahrbücher für National-ökonomie und Statistik, 1872, pp. 96 and 97.

later, during the second period, when the market rate had risen above the Bank rate, merchants did find it profitable to discount at the Bank and its issues became excessive.

The Depreciation of the Pound, 1809. Toward the close of 1808 and through 1809, the foreign exchanges fell rapidly and in terms of the paper money of England the price of bullion rose proportionately. The Bank had at last issued notes in excess of the legitimate needs of the country and the pound had depreciated. This marks the beginning of the second part of the period of suspension. A spirit of speculation had swept over England, brought about by a series of political and military events which forced the market rates above the Bank rate. The introduction of the Continental System by Napoleon,[11] having as its object the closing of the ports of continental Europe to British commerce, was one of the factors responsible for this spirit, particularly as it concerned the products of Russia and the East of Europe.[12] The occupation of Spain and Portugal by French troops in October of 1807, which opened the Spanish colonies in South America to the trade of the world, also stimulated the spirit of speculation, as British merchants hastened to form companies to trade with these new markets. With a rate of discount below that prevailing in the market, the Bank of England did its part in fanning the flame of speculation to an extent far beyond the bounds of ordinary rashness.[13] Not only had the notes of the Bank of England appreciably increased, but the country banks which had increased in number from six hundred in 1808 to seven hundred twenty-one in 1810 had enlarged their circulation to £30,000,000.[14]

The Bullion Committee. The large increase in the amount of bank notes in England during 1808, 1809, and 1810 caused prices to rise and the foreign exchanges to fall rapidly.[15] As Viscount Goschen would say, the decline in the purchasing power

[11] By the Berlin decree (Nov. 21, 1806); and extended by other decrees issued at Warsaw (January, 1807); Milan (December, 1807); and Fontainbleau (October, 1810). See Hayes, *A Political and Social History of Modern Europe*, p. 548; and Sumner, *A History of American Currency*, pp. 230–309.

[12] Macleod, Volume II, p. 136.

[13] *Ibid.*, p. 137.

[14] *Ibid.*, p. 138. The act of 1742 had conferred a monopoly of issue upon the Bank of England, the only banks not affected being those with less than six partners—the so-called country banks.

[15] In a recent article by Edwin R. A. Seligman, entitled *Currency Inflation and Public Debts*, published by the Equitable Trust Company of New York, the following statement appears on pages 19 and 20 regarding

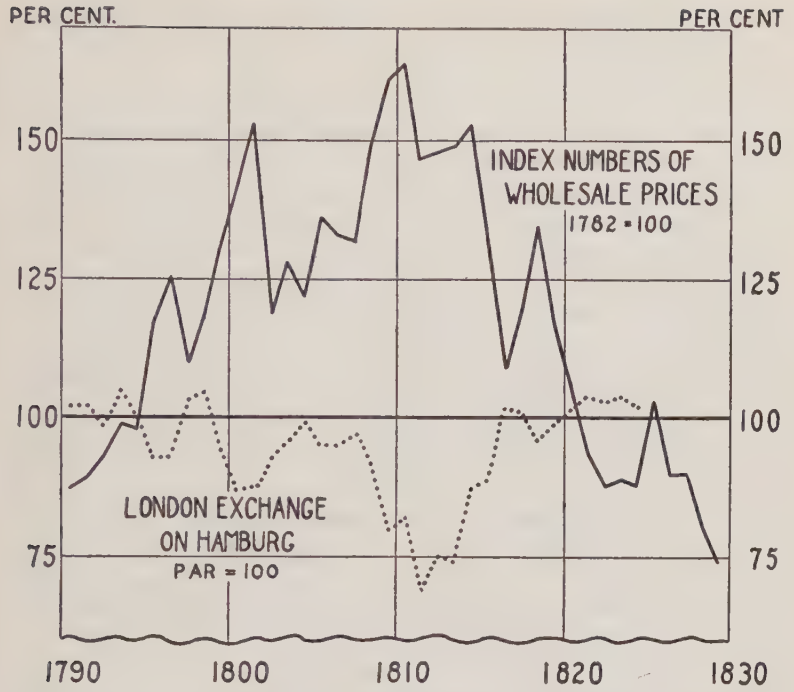


Chart II: Fluctuations in British Wholesale Prices and Fluctuations in London Exchange on Hamburg.

parity of the pound had caused the fall in the foreign exchanges. Not knowing, then, the reasons for the rise in the price of bullion (the premium on gold) and for the unfavorable exchanges, the House of Commons on February 1, 1810, resolved that a Committee should be appointed, to make an inquiry into, and an explanation of these phenomena. After examining a great many witnesses including bankers, merchants and others, they submitted their report to the House on the 9th of June, together with the testimony of those examined.[16]

the financial conditions of England at that time. "The inflation [before 1809] such as it was, was not primarily due, as yet, to the over-issue of paper. A few years later, however, the situation changed. By 1808–09 an era of speculation ensued and in the next few years the deficits were so great as to lead not only to a resort to fresh loans, with a consequent rise in prices, but also to an increase in the Bank of England note circulation, which soon amounted to more than double the original issue."

[16] Macleod, Volume II, p. 165.

The Gold Bullion Report. In this famous report, the Bullion Committee [17] declared it to be their opinion that:

1) *The depreciation of the Bank notes had been caused by their excessive issue.* "Since the suspension of Cash payments in 1797, however, it is certain that, even if Gold is still our measure of value and standard of prices, it has been exposed to a new cause of variation, from the possible excess of that paper which is not convertible into Gold at will; and the limit of this new variation is as indefinite as the excess to which that paper may be issued." [18]

2) *The legal regulation limiting the rate of interest to 5% prevented the Bank from curbing the speculative spirit of the merchants (had it been willing), by raising the rate of discount, when necessary, above this figure.* "It is necessary to observe, that the law which in this Country limits the rate of interest, and of course the rate at which the Bank can legally discount, exposes the Bank to still more extensive demands for commercial discounts. While the rate of commercial profit is very considerably higher than 5% as has lately been in many branches of our Foreign trade, there is in fact no limit to the demands which Merchants of perfectly good capital, and of the most prudent spirit of enterprise, may be tempted to make upon the Bank for accommodation and facilities by discount." [19]

3) *The fall in the foreign exchanges was caused by the excessive issues of Bank notes.* "A general rise of all prices, a rise in the market price of Gold, and a fall of the Foreign Exchanges, will be the effect of an excessive quantity of circulating medium in a

[17] The Bullion Report was drafted by Messrs, Horner, Huskisson and Thornton who drew largely from the conclusions reached by Ricardo in a pamphlet entitled, *The High Price of Bullion—a Proof of the Depreciation of Bank Notes.*

[18] *Report*, together with Minutes of Evidence, and Accounts from the Select Committee on the High Price of Gold Bullion, p. 16. It is interesting to note that the report of the Bullion Committee of 1810 was identical in its findings with the report of the Committee of 1804 which investigated the reasons for the depreciation of the Irish currency. In 1804 and 1810, the doctrines and policies of the respective Bank directors were condemned vigorously.

[19] *Ibid.*, pp. 56 and 57. The excellence of the Gold Bullion Report is by no means universally accepted. Prof. H. S. Foxwell in a review of *The Paper Pound of 1797–1821*, by Edwin Cannan, in the Journal of the Royal Statistical Society for March, 1920, terms it a "much overrated document."

While the Bullion Report declared that the depreciation of a currency might be measured by the premium on gold, it is felt to-day that a better measure is the index number of prices in the nation concerned.

country which has adopted a currency not exportable to other countries, or not convertible at will into a Coin which is exportable." [20]

4) *A restriction on the quantity of Bank notes issued would cause the foreign exchanges to rise.* "The restoration of the Exchanges used to be effected by the clandestine transmission of Guineas, which improved it for the moment, by serving as a remittance; and unquestionably also in part, probably much more extensively, by the reduction of the total quantity of the remaining circulating medium, to which reduction the Banks were led to contribute by the caution which every drain of Gold naturally excited. Under the present system, the former of these remedies must be expected more and more to fail, the Guineas in circulation being even now apparently so few as to form no important remittances; and the reduction of the paper seems therefore the chief, if not the sole corrective, to be resorted to." [21]

5) *The Directors of the Bank of England should regulate their issues with reference to the foreign exchanges.* "But Your Committee beg leave to report it to the House as their most clear opinion, that so long as the suspension of Cash Payments is permitted to subsist, the price of Gold Bullion and the general Course of Exchange with Foreign Countries, taken for any considerable period of time, form the best general criterion from which any inference can be drawn, as to the sufficiency or excess of paper currency in circulation; and that the Bank of England cannot safely regulate the amount of its issues, without having reference to the criterion presented by these two circumstances." [22]

6) *The amount of paper in circulation should be reduced—but by gradual stages.* "It is essential to the commercial interests of the Country, . . . that the accustomed degree of accommodation to the Merchants should not be suddenly and materially reduced." [23]

7) *The only sure remedy against an excessive issue would be found in making the Bank of England notes convertible.* "Your Committee are of the opinion, that no safe, certain and constantly adequate provision against an excess of paper currency, either occasional or permanent, can be found, except in the convertibility of all such paper into specie. Your Committee cannot, therefore, but see reason to regret, that the suspension of cash payments, which, in the most favorable light in which it can be viewed, was only a temporary measure, has been continued so long; and particularly, that, by the manner in which the present continuing Act

[20] *The Gold Bullion Report,* pp. 17 and 18.
[21] *Ibid.,* p. 38.
[22] *Ibid.,* pp. 49 and 50.
[23] *Ibid.,* p. 66.

is framed, the character should have been given to it of a permanent war measure." [24]

This report is one of the first documents to reveal a clear understanding of the influence of the discount rate on domestic inflation and the foreign exchanges. The Committee's reasons for the fall of the foreign exchanges, then, would accurately account for the depreciation of the European exchanges at the present time.[25]

The "Reasons" Advanced by the Officials of the Bank for the High Price of Bullion. For the directors to have admitted the validity of the findings of the Committee, would have reflected upon their management of the Bank. For the merchants to have accepted their conclusions would, of course, have had the effect of curtailing the amount of accommodation which they had been accustomed to receive. Consequently, both the directors and the English merchants rejected the opinions held by the Committee and advanced the arguments: that the Bank notes had not depreciated but that the price of bullion had risen, that the fall of the foreign exchanges was caused solely by England's adverse balance of trade, that the foreign exchanges were not influenced by the quantity of money in circulation, and that the notes of the Bank of England could not depreciate so long as they were issued upon bills of exchange representing actual commercial transactions.[26] The members of the House of Commons, also, by a large majority, in 1811, rejected the findings of the Bullion Committee and gave their endorsement to the doctrines advanced by the directors.[27]

[24] *The Gold Bullion Report*, p. 73.

[25] "The Bullion Committee asserted that so important a restriction of the note circulation could only be effected by raising the rate of discount. The board of the directors of the Bank thus had the alternative either to maintain the stability of the rate of discount as well as of the note circulation—this policy imparting monetary advantage to industry and commerce, but disadvantage to the rate of exchange—or to keep the exchange at par by continual alterations in the rate of discount. The board of directors decided, at the expense of the whole British economy, to adopt the first course, although the Bullion Committee strongly objected." Weill, *History and Basis of Modern Discount Policy*, p. 353.

[26] The Bullion Committee on pages 50, 53, 55 and 57 of their Report endeavor to refute this statement that bank notes cannot depreciate as long as they are issued on bills of exchange representing actual commercial transactions and that, therefore, so long as this is so, no limit need be placed on the quantity of notes issued.

[27] It is interesting to note that Sir Robert Peel voted with the majority,

A great reduction of the circulation, by reason of the failure of eighty-nine country banks, assisted by the close of the war and bumper crops, so rectified the exchanges and increased the gold reserves of the Bank that by November, 1816, the directors felt ready to set into operation a scheme for the partial redemption of their issues.[28] Hardly had this plan been instituted, than there arose a steady demand for gold from certain continental nations which were endeavoring to restore their currencies to a gold parity. This circumstance, accompanied by an increase in the amount of Bank notes, depreciated anew the foreign exchanges, raised the price of bullion and forced the Bank to discontinue the redemption of its notes. As both Houses of Parliament again felt it necessary to make an investigation, committees were accordingly appointed on the 3rd of February, 1819.[29]

The Inquiry of 1819. In the nine years that had elapsed, the commercial and a large part of the banking world had become convinced of the soundness of the doctrines set forth in the Gold Bullion Report of 1810. Even the Governor, Deputy-Governor and several of the directors of the Bank agreed, as was brought out in the Parliamentary Inquiry, that a reduction in the amount of Bank notes would favorably influence the exchanges.[30] As a tangible result of the inquiry, an act, which had been introduced by Mr. Peel, was passed requiring the Bank to resume specie payments by May 1, 1823, and providing for a plan of partial resumption until that date.[31] A very rapid improvement in the condition of the Bank enabled it to begin a complete redemption of its notes by May 1, 1821, which brought to a close the period of suspension.

Origin of the Concept of the Functions of the Bank Rate. The modern concept of the functions of the discount rate had its origin in the discussions which took place and the Parliamentary reports which were made during the suspension period. Many economists and bankers had come to recognize that the raising

[28] For a complete account of the details of this plan, see Andréadès, p. 238.

[29] Had the legislators taken time to read the Gold Bullion Report, they would have been fully aware of the reasons for the unfavorable exchanges without further investigation.

[30] However, the majority of the directors were still unconvinced and on the 25th of March, 1819 resolved that the issues of the Bank had no effect upon the exchanges. This resolution was not expunged from the books of the Bank until 1827. Macleod, Volume II, p. 202, and Walker, *Money in Its Relations to Trade and Industry*, p. 286.

[31] For the details of this act, see Macleod, Volume II, p. 216.

of the Bank rate above the market would curb credit expansions, would bring about a period of deflation with lower prices and would rectify the exchanges. Though the *modus operandi* of the discount rate had been recognized in its fundamentals by 1821, the experiences of the Bank during the crises of 1825, 1836, 1839 and 1847 added further to the existing stock of knowledge, so that when the crisis of 1857 occurred the Bank was fully aware of the proper course to follow in the management of the Bank rate.

The Crisis of 1825. The crisis of 1825 originated from the desire of English merchants to reap large rewards from trading with the former colonies of Spain in South America, which by 1824 had won their independence. As long as they had remained colonies of Spain their markets had been closed to British goods, but once they had been established as independent states the English manufacturer felt that a boundless market had been opened to his goods as well as a fruitful field for exploitation and development. The desire of the merchants to profit by these newly opened markets soon degenerated into a spirit of speculation. "Very soon the situation recalled memories not only of 1810 but of 1720 and the time of the South Sea bubble." [32] Some six hundred twenty-four joint stock companies were formed during the years 1824 and 1825 for the purpose of trading with South America, and of these, Gilbart has estimated, that only one hundred twenty-seven continued to exist in 1827.[33]

The Policy of the Bank. The Bank did nothing to curb the speculative tendencies of the people. Instead it continued to discount liberally at 4%, a rate which had been in effect since June 20, 1822, and which was now slightly below the market rate.[34] Toward the close of 1823, the foreign exchanges became unfavorable, resulting in gold exports and declining reserves at the Bank. In the face of this external drain of gold, the Bank increased its issues, defying every principle laid down in the Bullion Report. "When every consideration of common sense and prudence demanded a rapid *contraction*, when the speculative fever was plainly declared, instead of doing what they [the directors of the Bank] could do to check it, they added fuel to the flames." [35] Instead of raising its discount rate and contracting credit, the Bank, in May of 1825, actually began to

[32] See Andréadès, p. 250.
[33] See Gilbart, pp. 46 and 47.
[34] See Aretz, p. 173.
[35] Macleod, Volume II, p. 244.

grant Lombard loans at 3½%, that is, at ½ of 1% below the discount rate for bills of exchange.[36]

Rationing of Credit. During the summer of 1825 the Bank, at last, became alarmed over its declining reserves and frantically endeavored to contract its issues. On the 2nd of August advances were discontinued on stocks and the amount of its discounts arbitrarily curtailed.[37] Not until the 13th of December, however, was the discount rate raised and then only to 5% which was the highest the Bank could charge in accordance with the English statute. However, so long as the Bank continued to ration credit, the policy instituted on August 2, it made little difference whether the Bank rate was raised or not. Extensions of credit, on the part of a central bank, may be restricted either by raising the discount rate,[38] and thus eliminating the marginal borrowers (those who are unable or unwilling to pay the higher rate) or by rationing credit [39] in accordance with a predetermined scheme. If the latter plan is adopted, a central bank must determine the amount of credit it can safely extend, and then ration this among its various clients. Of course, this method of bringing about deflation is not, generally speaking, as good a method as the raising of the discount rate. When credit is parceled out, borrowers will fear that they may be unable to secure a quantity sufficient for their needs. They will therefore increase their demands over and above what is legitimately required and scramble frantically for their share. Again, those who are fortunate enough to secure advances are enabled to profit considerably by extending loans at the higher market rates. And finally, no matter how carefully the plan for the rationing of credit has been worked out favoritism toward certain individuals or groups may creep in, rendering this mode of deflation much less impartial than the method of discounting at high rates all eligible paper. But the usury law, limiting the discount rate to 5%, forced the Bank of England to adopt the credit rationing policy as a means of deflation in spite of its many disadvantages.

The Bank Begins Liberal Discounting. Financial condi-

[36] Aretz, p. 171.

[37] *Ibid.*, p. 165.

[38] Provided, of course, that the Bank rate, as raised, stands above the market rate and effectively controls it.

[39] Paper eligible for discount is simply a vehicle by which a central bank extends credit to the community. When a central bank refuses to discount bills formerly acceptable, its discounts would theoretically be reduced, and credit rationed in the sense that it would be extended only on the best paper.

tions grew progressively worse during the fall of 1825. Several banks failed, which caused runs on the remaining institutions. At this point, the Bank was forced to abandon its policy of rationing credit. Had it been continued, the commercial banks, still in business, would not have had sufficient funds to meet their depositors' demands and a panic would have ensued. Beginning with December 14, the Bank discounted with the utmost freedom. In reference to their new policy, Mr. Harmon, one of the directors, later stated: "We lent it [assistance on the part of the Bank] by every possible means, and in modes that we never had adopted before. We took stock as security, we purchased exchequer bills, we not only discounted outright, but we made advances on deposits of bills of exchange to an immense amount; in short, by every possible means consistent with the safety of the bank; and we were not, upon some occasions, over nice; seeing the dreadful state in which the public were, we rendered every assistance in our power." [40] Between the 14th, when the Bank began to discount with such liberality, and the 17th, upwards of five million pounds of notes were issued, which Macleod claims completely allayed the London panic.[41]

Comment on the Foregoing. In the management of the discount rate during this crisis, the Bank erred in not raising the rate sooner, and in not contracting its issues during 1824 and the first half of 1825, when the foreign exchanges were adverse. When the directors finally decided to restrict their accommodations, they were, as we have seen, forced by the legal limitations placed on the Bank rate to resort to a rationing of credit, a policy by no means as judicious as discounting at high rates. At the time of the crisis itself, however, when the reserve percentage declined rapidly because of a domestic demand for funds and when a panic was threatened, the Bank, in discounting liberally, pursued the only policy which would support the credit structure of the nation.[42] For banks to increase their loans lib-

[40] *Report* from the Committee of Secrecy on the Bank of England Charter. *Ordered* by the House of Commons *to be printed* 11 August, 1832, p. 154.

[41] Macleod, Volume II, p. 250.

[42] It might be well to differentiate at this point between the terms, crisis and panic. The beginning of the period of liquidation, when prices begin to fall, may be termed a crisis. As the liquidation proceeds the crisis merges into a period of depression. A panic occurs when the process of liquidation results, for some reason or another, in a breakdown of the financial and banking machinery. A panic is usually characterized by banks suspending cash payments, currency premiums, etc.

erally, when a panic is threatened or during a panic, has been found to be correct panic finance. Such a policy may actually prevent a panic or allay its severity.

The Act of 1833. The act of 1833,[43] which extended the charter of the Bank until 1855 (though the Government reserved the right to suspend the charter under certain conditions at the end of twelve years), exempted it from the usury laws, in the case of bills of exchange or promissory notes made payable at or within three months. The necessity for such action had been argued before the Committee of Secrecy on the Bank of England charter [44] by various witnesses,[45] but especially by Mr. Norman, a director, and Samuel Jones Lloyd, a distinguished banker who later became Lord Overstone. Both pointed out, that in case the market rate of interest should rise above 5%, the Bank would be deluged with requests for accommodation and could protect its reserve only by the rationing of credit. Prof. Aretz expresses the same thought in his work dealing with the development of the discount policy of the Bank of England: "Da sie gesetzlich ihre Rate nicht über 5% erhöhen dürfe, so könne

[43] Passed on the 29th of August, 1833. For the details of this act, see Macleod, Volume II, p. 272; or Gilbart, pp. 64–71.

[44] A committee appointed on May 22, 1832 to consider:

1) the causes of the panic of 1825.
2) the expediency of having the Bank of England publish its accounts periodically.
3) the effects of the usury law limiting the rates of interest to 5%.
4) the possible advantages or disadvantages of making the Bank of England notes legal tender.
5) the advisability of having other banks issue paper money in London aside from the Bank of England.

[45] The testimony of some of the witnesses is intensely interesting, in throwing light upon the management of the Bank. Mr. Horsley Palmer, Governor of the Bank, at that time, stated that the Bank considered it advisable to hold a cash reserve of 33⅓% when the foreign exchanges were favorable. Later, when asked if it were not desirable for the benefit of the country to have the rate of interest as low as possible, he replied: "Certainly; but the reduction by competition, on the part of a body like the Bank, would tend to an excess, thereby raising the prices and turning the Exchanges against the country, which would occasion a reaction more prejudicial in its effects than any previous benefit to be derived in a temporary reduction in the rate of interest." (Report of 1832, question ₰563.) Later on in his testimony, "he condemned strongly the practice of the Bank during the restriction with respect to the extensive discounts of mercantile paper at 5%, when the market rate was much higher, which necessarily led to an excessive issue." (Macleod, Volume II, p. 267.)

sie ihre Diskontierungen nicht auf diesem Wege einschränken, sondern nur durch Zurückweisung von solchem." [46]

Speculative Tendencies from 1834 to 1836. No sooner had the Bank's charter been extended, than England was infected with the virus of speculation, as in 1824 and 1825. Through the years 1834, 1835 and 1836, a rapid increase had occurred in the number of railway companies and joint stock banks. Concurrently with the formation of the new concerns at home, the British exported large amounts of capital to the various nations of Europe and to the United States.[47] In fact, the debtor countries were eager to import capital from England by reason of the low rates of interest prevailing in London—rates artificially low due to the large extensions of credit on the part of the joint stock banks.

Beginning with March of 1836, the reserve of the Bank declined steadily,[48] though it was not until July, that the directors decided to raise the discount rate from 4 to 4½%. On the 1st of September the rate was again raised to 5%. The Bank rate was not further advanced, although the market rate of discount on the best bills stood at 5½%, from November of 1836 to May of 1837, or ½ of 1% above the Bank rate.[49] This condition would have caused the market to be in the Bank and inflation to proceed merrily on, had not the directors announced in August that the bills, which had been endorsed by joint stock banks, would no longer be discounted. The directors were compelled, however, to abandon this policy in November, when the Northern and Central Bank, with thirty-nine branches, appealed to it for aid. Rather than allow this institution to fail with the probable consequence of a panic and run on other banks, the directors extended it in all, £1,370,000. For the same reason, the Bank advanced some £6,000,000 early in 1837 to the bankers interested in the American trade. "It had no cause to regret its

[46] Aretz, p. 191.

[47] The failure to renew the charter of the Second Bank of the United States in 1836 necessitated the use of a larger amount of specie in America. This was obtained by selling American securities in England and taking the proceeds in the form of gold which was sent to America.

[48] As was mentioned earlier, the Bank endeavored to maintain a cash reserve of 33⅓%. In October 1833 the reserve amounted to as much, but from then through the difficulties of 1839, the Bank had great trouble in maintaining the reserves at this figure.

[49] *Report* from the Select Committee on Bank Acts; together with the Proceedings of the Committee, Minutes of Evidence, Appendix and Indices. *Ordered* by the House of Commons, *to be Printed*, 30 July, 1857. Question #4876.

courage: not only was a terrible crash avoided, but the advances made were repaid almost in full." [50]

Economic Conditions Improve in 1837 and 1838. Financial conditions in England improved considerably during 1837. By December, the market rate of interest had fallen to 3½%, and during the year the bullion in the Bank more than doubled.[51] The Bank felt justified, then, in lowering its discount rate to 4% on February 15, 1838, and to 3½% in November for advances upon bills of exchange, East India bonds, exchequer bills and other approved securities.[52]

The improvement in economic conditions was only temporary. The bad harvests of 1838, necessitating the importation of grain to the value of £10,000,000 sterling, coupled with a breakdown of the credit machinery on the continent, which forced the Bank of France to appeal for funds, caused heavy exportations of bullion from England beginning with 1839.

The Crisis of 1839. Through the first quarter of 1839, the market rate of interest was higher than the Bank rate, "and the consequence was an immediate pressure for accommodation on the Bank." [53] "Notwithstanding the continuous rise in the market rate of interest, and the unmistakable drain of bullion that had set in," [54] the Bank seemed paralyzed, for it was not until the 16th of May, 1839, that the directors raised the Bank rate to 5%. On the 20th of June, the Bank rate was again raised to 5½%, and on August 1, to 6%, with the announcement that no securities would be received except bills of exchange.[55] These measures proved ineffective in stopping the drain, which proceeded at such a rapid rate that it was feared the Bank would soon be bankrupt. On the 16th of July, its liabilities were £28,860,000 and its specie holdings amounted to only £2,987,000.[56] The fear on the part of the public, at home and abroad, that the Bank would suspend accelerated the drain. Only through borrowing £2,000,000 from the Bank of France and £900,000 from bankers in Hamburg (a practice which the

[50] Andréadès, p. 266.

[51] Report from the Select Committee of 1857, question #4876, and p. 148 of the appendix.

[52] Macleod, Volume II, p. 282.

[53] *Ibid.*

[54] *Ibid.*

[55] From September 1839 to January 1840 the market rate for first class bills stood at 6½% or above. *Report* from the Select Committee of 1857, #4876.

[56] Macleod, Volume II, p. 283.

Bank of England repeated during the Baring difficulties of 1890) was suspension averted. This measure had the effect of gradually arresting the drain of bullion, which reached its lowest point in the week ending September 2, 1839.[57]

Comment on the Foregoing. The necessity of borrowing from the Bank of France would probably have been eliminated, had the Bank rate been raised earlier and high enough to attract foreign capital. This was not done because the directors were not aware then of the power of a discount rate relatively high in comparison with those prevailing in other nations to draw capital from abroad.[58] Nor had the directors learned the importance of maintaining the Bank rate, during the upward swing of the business cycle, above the market rate and at a point which would check inflation and speculation and stay the foreign drain. The directors seemed paralyzed in the cyclic drain of 1839. When they finally perceived the dangers threatening the Bank, they very tardily raised the Bank rate and refused to make advances on any securities excepting bills of exchange. The psychological effect of the latter measure was to accelerate the drain. The directors had not even profited by the policy followed in 1825 and which proved to be so very effective then in allaying a panic, i. e., of discounting liberally but at a high rate during the crisis itself. The discount policy of the directors in 1839 was much less commendable on the whole than that of the directors in 1825.

The Inquiry of 1840. As had been customary after former crises, a Committee from Parliament was appointed on the 10th of March, 1840, to probe into the reasons for the recent financial disturbances and to formulate a plan for reforming the banking system which would prevent their recurrence. The Committee sat for nearly two years and asked some 5000 questions without reaching any definite conclusions as to the modifications needed in the Bank act.[59]

[57] Macleod, Volume II, p. 285.

[58] Aretz, p. 22.

[59] Many of the persons examined by the Committee, among them Richard Cobden, quite legitimately criticised the Bank for not having raised its discount rate at the beginning of the drain. (*Report* from the Select Committee on Banks of Issue—*Ordered*, by the House of Commons *to be Printed* 7 August, 1840, question ♯502.) Tooke (question ♯3769) pointed out in an able manner the effect of a rise in the interest rate on the foreign exchanges, stating that the foreign capitalists would be induced "to abstain from calling for their funds from this country, to the same extent as they otherwise might do, and it would operate at the same time in diminishing the inducements to capitalists in this country to invest in foreign securities, or to hold foreign securities, in order

The Currency Principle. Though the Committee itself was unable to propose remedial measures, Sir Robert Peel, member of the Conservative Party and Prime Minister from 1841 to 1846, had quite definite ideas as to the reforms needed. The cause for England's recurring crises was due, he felt, to the overissue of notes on the part of the banks, leading to higher prices and to the exportation of specie. By prohibiting the issue of bank notes, excepting against deposits of an equivalent amount of specie, the possibility of an overissue would be eliminated. If gold were then exported, for any reason, bank notes could not be substituted for the specie shipped abroad, but would suffer a proportionate decline. When bank notes are based entirely upon specie, as Peel urged, they are said to be issued in accordance with "the currency principle." [60]

The adherents of the currency principle, pointed out in support of their idea that each nation is possessed of an amount of specie necessary to maintain its prices in an equilibrium with the prices prevailing in other countries. This is so because a flow of specie from one nation to another, if long continued, would cause prices to fall in the first, prompt foreigners to purchase there, increase the commodity exports and reverse the flow of the precious metals. To replace with bank notes the gold which had been exported, would by preventing the fall in prices, impede the operation of these natural forces and might result in driving all of the specie from the country. The only way of making sure, that as specie is exported, bank notes will be reduced proportionately, is to forbid their issue unless protected by deposits of specie to an equivalent amount. In securing gold for exportation, the notes would thus be redeemed and would automatically decline.

Criticism of the Currency Principle. No one would think of disputing the fundamental proposition of the currency school

to make investments in British stocks or shares." In answer to questions ♯1918 and ♯1949 the same reply was made by others. Samuel Jones Lloyd stated it as his opinion that "during periods of tranquillity . . . the Bank rate of discount is generally above the market rate, but during periods of heavy pressure, should be inclined to say that the market rate was above the Bank rate" (Question ♯2837). Undoubtedly, as has been indicated already, speculation during the upward swing of the business cycle was intensified by the Bank rate not keeping pace with the advances in the market rate.

[60] The term "current principle" was first used by Mr. G. W. Norman in his evidence before the House of Commons Committee on Banks of Issue, 1840, question ♯2018. The proponents of the currency principle included, besides Mr. Norman, Sir Robert Peel, Mr. Samuel Jones Lloyd (Lord Overstone), and Colonel Torrens.

that movements of specie between gold standard countries tend to keep in equilibrium the prices of goods entering into international trade. The acceptance of the validity of this proposition, however, does not necessitate the conclusion that bank notes should be based entirely upon gold, or that when based entirely on gold will decline in quantity as specie is exported abroad. In the crisis of 1847 in England, the exportation of specie, though the Bank of England notes were then issued in accordance with the currency principle, did not result in a reduction in the quantity of those notes. Gold may be withdrawn from a central bank, not only through the redemption of notes, but also by the discounting of bills, the proceeds of which, withdrawn in the form of specie, are shipped abroad. In fact, in England during the crisis of 1847, though the bullion held by the Bank declined by nearly a half, the notes in circulation actually increased. Further it must be noted that bank notes issued only on deposits of specie are rendered inelastic and incapable of meeting satisfactorily seasonal and cyclic demands for money, the latter being due to the recurring periods of prosperity and decline which have so characterized economic data during the past hundred years.

The Banking Principle. Peel's bill embodying the principles of the currency school was opposed vigorously in England by the adherents of the "banking principle" [61] of issuing notes. The proponents of this theory were opposed to any restriction on the quantity of bank notes issued by a central bank, maintaining that an overissue could not take place as long as the notes remained convertible and were put into circulation only by discounting good commercial paper. Should the issues become excessive, they would be quickly returned to the banks and redeemed. Such principles of bank-note issue would operate best, of course, in a country like Canada, where there exist a number of note-issuing banks competing with one another, and each one promptly redeeming such of the notes issued by the other banks as have fallen into its possession.[62] In most countries, however, one bank has secured a monopoly of the privilege of issuing notes. Should

[61] The proponents of the "banking principle" included Thomas Tooke, Mr. Fullerton, Mr. James Wilson and M. Courcelle-Seneuil.

[62] It must not be thought that the true banking principle is followed in Canada, for the issues of the different chartered banks, excepting under particular circumstances, are limited to the amount of the paid-up capital of each.

this institution be wisely managed, should the reserve be kept at a figure high enough to assure prompt redemption, and should the discount policy of the bank be such as to curb speculation, its notes could be issued in accordance with the banking principle with no injurious results. But experience has shown that bankers, when allowed this freedom, have not always wisely regulated their issues of notes; either through ignorance of the economic effects or by reason of political pressure, overissues have frequently occurred.[63] In order, therefore, to protect the people from being defrauded by excessive issues of notes, nations have found it necessary, in chartering a central note-issuing bank, to stipulate the percentage of gold or cash reserves which at all times must be maintained to insure the prompt redeemability of the bank notes.

The Peel Act. The Peel Act was an embodiment of the doctrines of the currency school. The provisions of this act which are important for their bearing on the development of the discount policy of the Bank of England are the following:

1) After the 31st of August, 1844, the issue of notes was to be kept entirely separate from the general banking business of the Bank of England, and was to be placed in charge of a committee of directors appointed by the Court, under the name of the "Issue Department of the Bank of England."

2) On the same day the Governor and Company of the Bank of England were required to transfer to the issue department securities to the value of £14,000,000 and also as much gold and silver coin as should not be required by the banking department. The issue department was to deliver to the banking department an amount of notes exactly equal to the securities. gold and silver coin so deposited.

3) The proportion of silver bullion in the issue department to the gold coin and bullion held by the same department was not to exceed one-quarter at any one time.

[63] The fact that a bank issues notes solely on bills of exchange growing out of actual commercial transactions does not preclude the possibility of their overissue. During an era of speculation a central bank might issue so many of its notes, based on commercial paper, as to drive the specie abroad. Prices would rise, and as they rose, more notes would have to be issued as the bills of exchange would be drawn for larger amounts of money comparable to the new commodity price level, the issuance of these additional notes forcing prices up further, and so *ad infinitum*.

4) All persons were to be entitled to demand Bank notes in exchange for standard gold bullion at the rate of £3 17s. 9d. per ounce from the 31st of August on.
5) In case any banker, who on the 6th of May, 1844, was issuing his own notes, should cease to do so, it would be lawful for the Crown in Council to authorize the Bank to increase the amount of securities in the issue department to any amount not to exceed two-thirds of the amount of notes withdrawn from circulation, and to issue its own notes to a corresponding amount.
6) Weekly accounts of the assets and liabilities of the Bank were to be transmitted to the government.
7) Additional notes might only be issued by the issue department against deposits of specie to an equal amount; excepting the notes which were to be issued against securities as provided in the act and as described above.[64]

The Bank Rate Lowered to 2½%. On the fifth of September, following the passage of the Peel Act, the directors lowered their rate of discount from 4 to 2½%. By reason of its high rate, the Bank for some time had been entirely "out of the market," and therefore lowered its rate that it might conform more with actual market conditions, and also that the Bank might invest a larger proportion of its resources[65] and increase its profits. In the speeches of the proponents of the Peel Act, the directors of the Bank had been distinctly told that they no longer needed to be cautious in the granting of discounts, as the banking department was henceforth to be managed like any banking concern using Bank of England notes.[66] An overissue could not take place for the currency was to be controlled by self-acting invariable principles. Since the issue department was henceforth to be regulated by such automatic forces, the directors felt themselves free in the banking department "to use their full

[64] For the complete details of the Peel Act, see Macleod, Volume II, pp. 299–302.

[65] This reason for the lowering of the rate is given by most authorities, see Palgrave, *Bank Rate and the Money Market*, p. 49; and Gibson, *Bank Rate—the Banker's Vade Mecum*, p. 55.

[66] In this connection Sir Robert Peel said: "Our general rule is to draw a distinction between the privilege of issue and the conduct of the banking business. We think they stand on an entirely different footing. We think that the privilege of issue is one which may be fairly and justly controlled by the State; and that the banking business is a matter in respect to which there cannot be too unlimited and unrestricted a competition." From speech in the House of Commons, May 6, 1844, quoted in *The Bankers' Magazine* (London) Volume I, 1844, p. 190.

Discretion like any ordinary trading Company acting for the Profit of its Proprietors." [67]

The Bank maintained its rate of discount at 2½% until the 16th of October, 1845, when the rate was raised to 3%, and later, on November 6th, to 3½%.[68] The rate continued unchanged at that figure until the 27th of August, 1846, when it was lowered to 3%.

The Deficient Harvests of 1846. The year 1846 was marked by the failure of the potato crop in Ireland and by a deficient harvest in England. The failure of the crops necessitated the exportation of large quantities of coin and bullion, beginning with November, 1846, to secure foreign grains. "Consequent upon the Arrangements made for that Import, the Exchanges with the Continent and America rapidly declined, and between the Months of December, 1846 and April, 1847, the Demand made upon the Bank in their Banking Department reduced the Reserve from Nine and a Half Millions in December to Three Millions in April." [69] Though the exchanges had been unfavorable since the 14th of November, and though the market rate of discount for the finest bills had been above 3% during November and December of 1846,[70] the Bank rate was not raised until the 16th of January, 1847, from 3 to 3½%. On the 23d of January the rate was raised to 4%, on the 10th of April to 5%, and a limit placed on the amount of bills which the Bank would discount, no matter how excellent they might be.[71] "Here we have the same inveterate blunder committed by the Bank on so many previous occasions—an immense drain of bullion, and yet none but the most feeble, inefficient, and puerile means taken by the Bank to raise the value of money." [72] The directors had been told by the advocates of the currency principle that as specie was exported the notes of the Bank of England would

[67] *Report* from the Secret Committee of the House of Lords appointed to inquire into the Causes of the Distress which has for some Time prevailed among the Commercial Classes, and how far it has been affected by the Laws for regulating the Issue of Bank Notes payable on Demand, *Ordered*, by The House of Commons, *to be Printed*, 28 July, 1848, p. XXXIII. This Committee was appointed on November 30, 1847.

[68] Juglar, *Des Crises Commerciales*, p. 355.

[69] From the testimony of Mr. Horsley Palmer before the Lords Committee of 1848, question ♯684.

[70] Report from the Select Committee of 1857, question ♯4876.

[71] The possibility of inequitable distribution of credit if deflation is brought about through the rationing of credit rather than through the raising of the rate of discount has already been noted.

[72] Macleod, Volume II, pp. 306 and 307.

decline proportionately, causing prices to fall and leading to commodity exports and gold imports. To their surprise, however, they at length saw that the amount of bank notes in circulation did not decline as the bullion was exported, and they tardily inaugurated a policy of contraction [73] by the rationing of credit. This had the effect, by May, 1847, of raising the market rate of discount to 7% on the finest of bills, which stopped the foreign drain.

Criticism of the Policy of the Bank. The pressure upon the Bank from November of 1846 to the spring of 1847 (the first phase of the crisis of 1847) resulted from heavy exports of gold abroad, particularly to the United States, to secure grain.[74] The Bank was severely criticised by witnesses who appeared, in 1848, before the Secret Committee of the House of Lords, for not having raised its discount rate sooner, during this period, when the foreign exchanges were unfavorable and bullion was leaving the country. Mr. James Lister, head of the Union Bank in Liverpool, in testifying before the Committee, stated: "If they [the directors of the Bank of England] had raised the Rate of Interest sooner I think it would have caused a Contraction and checked Operations earlier, and caused a less violent Crisis. In the City they told me at the Time that the leading monied Men complained bitterly of the Bank not raising the Rate." [75] Mr. G. W. Norman, a Bank director since 1821, corroborated Mr. Lister's opinion: "With my present Knowledge of Facts, I certainly cannot doubt but that the Pressure would have been less intense in April, if the Rate of Interest had been raised earlier." [76] Thomas Tooke held the same opinion.[77]

The Lords Committee Report on Rationing Credit. While the Lords Committee agreed with the testimony of these authorities that the Bank should have raised its rate earlier and that the failure to do so "aggravated the Intensity of the subsequent

[73] Their failure to raise the rate sooner "aggravated the Intensity of the Pressure, to the great Loss of the Public and the Embarrassment of the Bank itself," Lords Report of 1848, p. XXXIX. See also Sivers, p. 98.

[74] *Report* from the Secret Committee of the House of Lords, pp. XXII to XXXI.

[75] *Report* from the Secret Committee of the House of Lords, 1848, Question ♯2450. The same view was held by Samuel Gurney, question ♯1098, 1100; by Samuel Jones Lloyd, question ♯1355; and by the Committee, p. XXXIX.

[76] *Ibid.*, question ♯2690.

[77] *Ibid.*, question ♯3051.

Pressure in April," [78] they condemned the particular method used in contracting credit. "In the course of this Process [the rationing of credit, or the limitation of discounts] it is scarcely necessary to point out how much the Commercial Difficulties must have been aggravated. This cannot be denied even by those who anticipate that the Bank might have been relieved, and the Bank Reserve strengthened. But if the Effect had been to increase the Pressure and Alarm to a greater Degree, by the Limitation of the Discounts, then that Alarm and Pressure were mitigated by the Augmentation of the Reserve, the Condition of the Bank, already shown to be perilous, would have necessarily become still more alarming, and 'the Remedy might have proved,' to use the Words of a Witness already quoted, 'still worse than the Disease.'" [79]

Speculation in Food-Stuffs, 1847. The high price of grain during the spring of 1847 had tempted many speculators to arrange for the importation of food-stuffs and other products out of all proportion to their financial strength.[80] A subsequent fall in the price of wheat, corn and sugar, due to the abundant harvests of 1847, caused the failure of many concerns which had speculated in these commodities and material distress in other branches of commerce.[81] In commenting upon the situation, Mr. George W. Norman stated: "There was a very large, and I think indiscreet, Extension of Trade beyond the Capital the Parties had to carry it on, in the Corn Trade, in consequence of the Profits which had resulted from the first Importations of Corn. In the India Trade there was a larger Extent of Trade carried on than was justified by the Amount of Capital, and which had been supplied by renewing Bills. . . . After the failure of One or Two Houses it appeared that Credit had been stretched to a most unreasonable Extent, larger than I ever recollect." [82]

The Internal Drain of 1847. On the 9th of August, Leslie, Alexander and Company stopped payment, the first to fail of many houses engaged in the importation of foreign products. The failures that followed generated a general spirit of discredit, resulting in a widespread withdrawal of deposits from banks. During August, the Bank of England found it neces-

[78] Report from the Secret Committee of the House of Lords, 1848, p. XXXIX.

[79] *Ibid.*, p. XVII.

[80] *Ibid.*, testimony of Mr. Horsley Palmer, question ♯684.

[81] *Ibid.*, testimony of Mr. William Cotton, questions ♯3193–4.

[82] *Ibid.*, question ♯3149.

sary to raise its minimum rate of discount to 5½% because of the declining percentage of its gold reserves. This, however, was but a minimum rate, as much of the paper was discounted at higher rates ranging up to 7%. Beginning with the 2nd of October the Bank refused to make further advances on stock or exchequer bills,[83] an action which caused a rapid liquidation of stocks on the exchange. On the 18th the Royal Bank of Liverpool stopped payment, followed by the failures of the North and South Wales Bank, the Liverpool Banking Company and the Union Bank of Newcastle. "A complete cessation of private discounts followed," [84] every one scrambled for money and no one would part with that which he had.

Suspension of the Peel Act. The condition of the Bank was such that it could issue no more notes without violating the provisions of the Peel Act and yet if this were not done, the entire credit fabric of England would be endangered. Consequently the Bank on Saturday, the 23rd of October, secured the permission of the Ministry to issue notes beyond the limits set down in the Peel Act, a fact which was made public on the 25th at one o'clock. The Ministry, in authorizing the Bank to increase its issues, recommended that its rate of discount be not less than 8%, and that the amount of its discounts be restrained within proper bounds. Should an extraordinary issue of notes take place, the profits derived therefrom were to go to the government, and a Bill of Indemnity, so the Ministry promised, would be introduced in Parliament to relieve the directors from such legal penalties as they might be subject to in enlarging their issues.[85] The Bank, however, did not find it necessary to issue notes in violation of the law, for no sooner did the commercial classes realize that notes could be procured than the desire for them vanished and the notes which had been hoarded were released.[86]

Differences between the Spring and Fall Pressures of 1847. The reasons for the pressure upon the Bank in the Spring and in the Fall of 1847 must be sharply differentiated; the Spring pressure was caused by an external drain, while a domestic demand for funds caused the pressure in the Fall. The Lords Committee con-

[83] Macleod, Volume II, p. 312.

[84] *Ibid.*, p. 313.

[85] The Treasury Letter of October 25 is printed in full on p. X, of the Report of the Secret Committee of the House of Lords, 1848.

[86] Mr. Gurney testified before the Lords Committee in 1848 that the amount of notes which had been hoarded and were released came to £4,000,000. *Ibid.*, p. XI.

cluded that during the Spring pressure the Bank erred in not raising its discount rate sooner and to a level which would, by contracting the circulating medium at home, stay the exportation of gold abroad, rectify the exchanges and eventually render it profitable for foreigners to send gold to England. On the other hand, the Committee declared that in the Fall, when the foreign exchanges were favorable, the Bank should have followed an entirely different procedure. As early as September it should have increased its accommodation (though at a rate above the market rate)—the only effective way of allaying alarm at the time of a cyclic demand.[87]

Lessons of the Crisis of 1847. Though the discount policy of the Bank during the crisis of 1847 left much to be desired, the crisis had not been in vain. The Bank had profited greatly from the illuminating experiences of that time and from the testimony of the witnesses appearing before the Committees of Inquiry. It had come to realize that the Peel Act did not by itself prevent overexpansion, that Bank of England notes would not necessarily contract as gold was exported and that there could be deposit inflation as well as note inflation. Above all else, the Bank had come to realize that its banking department could not be managed like an ordinary bank, with sole reference to its own safety. As the holder of the ultimate banking reserve of England, the Bank realized that its policies must be so framed as to protect this reserve.

Discount Policy of the Bank during the Crisis of 1857. The knowledge gained in 1847 was soon put to the test. Courageously and unhesitatingly the Bank raised its discount rate immediately the crisis of 1857 was threatened, and raised it to a level sufficiently high to counteract any danger. At the time of the crisis itself, from November 13 to November 30, the Bank discounted liberally but at a high rate in order to abate the public alarm.[88]

[87] See pp. XXII–XXXIII of the Report from the Secret Committee of the House of Lords, 1848. It must not be thought that the Bank erred in *raising* their discount rate in the Fall. They erred in their refusal to extend accommodation liberally. Even in the case of an internal drain the Bank rate should stand above the market rate to curb speculative tendencies.

[88] For a detailed discussion of the crisis of 1857, see Andréadès, pp. 343–352. On the 12th of November, 1857, the ministry allowed the Bank to exceed the limit of the issues prescribed in the Peel Act on condition that the directors continue to discount at 10%. The Bank issued two million pounds of notes in excess of the statutory limits. After November 30 no notes were issued in excess of these limits. The crisis was caused by (1) an unprecedented extension of foreign trade, (2) ex-

The testimony of Thomas Matthias Weguelin, Governor of the Bank of England, and Sheffield Neave, Deputy-Governor, before the Select Committee of 1857 on Bank Acts, covering one hundred sixteen pages, reveals very clearly that these gentlemen understood the principles which should govern the discount policy of a central bank during normal periods, as well as during the time of a domestic or a foreign drain. In commenting upon the discount policy of the Bank during the crisis of 1857, the Right Hon. Lord Overstone (S. J. Lloyd) stated: "I believe that the Bank during the last two years has been managed, as nearly as human affairs can be, perfectly, and that if there had been the same firmness in 1847, it would very materially have mitigated some of the evils of that crisis. On the other hand, I believe that had the Bank, during the recent period of pressure, delayed in raising her rate of discount, as she did in 1847, considerable inconvenience might have arisen." [89] When asked if "the difference between the circumstances in 1847 and those of the last two years [1856 and 1857] is very much to be traced to a better management on the part of the Bank of England," he replied: "It is to be traced to better management on the part of the Bank of England, to greater intelligence on the part of the public respecting the principle of monetary management, and to the fact that in 1847 the mercantile community were found in a state not so well prepared to meet the pressure as they have been in 1857." [90]

Testimony of Mill. The testimony of John Stuart Mill before the Committee indicated the change which had taken place in the attitude of the directors since 1847. He said: "I think they at first began, after the Act of 1844 [the Peel Act] to act entirely upon that principle [that in the management of the banking department they had nothing whatever to consider but their interest as a bank]; they took the word of Sir Robert Peel, the author of the Act, anything they did as mere bankers, in the management of their deposits, was no concern of the public, but only their own concern. . . . I think that since 1847 the Bank have been quite aware, and the public have been aware, that that view of the Act of 1844 is not sustainable; and that an establishment like the Bank is not like other bankers, who are at liberty to think that

cessive importations of specie, (3) a rapid development in banks and credit institutions.

[89] *Report* from the Select Committee on Bank Acts; together with the Proceedings of the Committee, Minutes of Evidence, Appendix and Index. *Ordered*, by the House of Commons *to be Printed*, 30 July, 1857, question ♯4010.

[90] *Ibid.*, question ♯4012.

their single transactions cannot affect the commercial world generally, and that they have only their own position to consider. The transactions of the Bank necessarily affect the whole transactions of the country, and it is incumbent upon them to do all that a bank can do to prevent or to mitigate a commercial crisis. This being the position of the Bank, and the Bank being much more aware of it since 1847 than they were before, they have not acted so entirely as before on the principle that they had nothing to consider but their own safety." [91]

Conclusion. It may be concluded then, that the directors of the Bank of England had a clear concept, during the crisis of 1857, of the procedure which a central bank should follow in the management of its discount policy—a knowledge which they had mastered sometime after the crisis of 1847 [92] but which in its entirety was the outgrowth of the experience through which the Bank passed from 1797 to 1850. The propositions thus established as fundamental regarding the management of the Bank rate were:

1) That excessive issues on the part of a central bank in the form of notes or deposits will raise prices, drive gold abroad and depreciate the foreign exchanges.

2) That deflation may be brought about, imports of gold and capital induced, and the exchanges restored, through elevating the Bank rate; and that this method of contraction is to be preferred to the rationing of credit.

3) That the bank rate should ordinarily be kept above the market rate, and that it should anticipate advances in the market rate in order to curb inflationary tendencies.

4) That a central bank should discount liberally but at a high rate during a crisis.

5) That a central bank, as the holder of the ultimate banking reserve of a nation, should be managed with a view of protecting this reserve rather than with a view of making profits.

[91] Report from the Select Committee of 1857, question ♯2032.

[92] Dr. Sivers, fixes definite dates for the beginnings of modern discount policies in France and Germany. He states that the Bank of France since March, 1852, and the Bank of Prussia since May, 1856, began to manage their discount rate in such a manner as revealed that they understood clearly the uses and purpose of the discount rate. p. 65.

CHAPTER II

THE ADMINISTRATION OF THE BANK RATE IN ENGLAND, GERMANY AND FRANCE

The first chapter was devoted to the development of the modern concept of the functions and purpose of the Bank rate,—a concept which had its origin in the monetary and banking experiences through which the Bank of England passed from 1797 to 1857. The present chapter will treat of the pre-war discount policies of the Bank of England, the Bank of France and the Reichsbank. In treating of the discount policies of these banks, we shall direct our attention first toward such details of primary importance, as the procedure which they followed in changing the Bank rate, their regulations governing eligible paper, and their attitude toward Lombard loans.

The Discount Policy of the Bank of England. Of the three central reserve banks selected for our study, the oldest is the Bank of England, whose history, as we have seen, has been rich in experiences bearing on the administration of the Bank rate. The "Old Lady of Threadneedle Street" is quite the *grande dame* among central reserve banks. Her prestige is due in part to her long history, in part to the economic and financial supremacy of England, and in part to the fact that after 1821 London was for all practical purposes the only free gold market of the world.[1]

[1] That is, any one anywhere having a credit balance in London might withdraw the amount in the form of gold at any time. In this connection, see Lawson, *Lombard Street under Foreign Control*, pp. 385–386.

With the outbreak of the Great War, specie payments were suspended in England as indeed throughout all of Europe. The author in this chapter is considering the discount policies of these banks from the point of view of their existence before the Great War, when England was on a gold basis. It is for this reason that the present tense of the verb is used in speaking of the discount policies of these banks, policies which the war has greatly changed. Though great alterations have occurred, the author feels a thorough study of the pre-war discount policies of these banks is justified for the following reasons: (1) the administration of the Bank rate is not fundamentally different whether a nation be on a gold or paper standard, (2) the author believes that the nations of Europe will return to a gold basis as rapidly as conditions will permit, and will then reinstitute such of the principles governing the Bank rate and their dis-

The Bank Rate. The official minimum discount rate of the Bank is ordinarily fixed on Thursday morning at the weekly meeting of the court of directors,[2] though the rate may be changed during the week by the Governor of the Bank if he feels that economic and financial conditions warrant such hasty action.[3] The Governor has rarely exercised this power and when he has, it has usually been to raise the rate in order to protect the Bank's reserves from sudden financial disturbances. Of the four hundred sixty-one alterations made in the Bank rate from the 15th of September, 1844, to the 31st of December, 1912, only forty-seven were ordered by the Governor, the remainder having been made by the court of directors at their weekly meeting.[4] The rate fixed at the main office of the Bank of England prevails at all its branches.[5]

The Meaning of the Bank Rate. The Bank rate is a minimum rate, i. e., the minimum rate which is charged for discounting first-class three months' bankers' bills.[6] The rule that the Bank rate is a minimum rate is enforced, whenever too many bills are brought to the Bank for discount. On such occasions the bills will not be taken excepting at a higher rate.[7] The Bank rate, however, is

count policies as have been suspended since 1914, and (3) inasmuch as the United States is now on a gold basis the discount policy of the Federal Reserve Banks should be shaped to a certain extent by the pre-war discount policies of the European central banks.

[2] *Interviews* on the Banking and Currency Systems of England, Scotland, France, Germany, Switzerland and Italy: conducted by the National Monetary Commission, Senate Document No. 405, 61st Congress, 2d Session, p. 26.

[3] *Ibid.*, p. 26.

[4] Gibson, *Bank Rate; the Banker's Vade Mecum*, p. 288. The importance of this Thursday meeting is brought out by Mr. F. E. Steele, in an article entitled, "*Bank Rate*": *Its Effect on Market Rate, and on the Prices of Goods and Securities*, p. 348: "If you want evidence that the Bank rate still is an important factor you can easily satisfy yourself on the point by going into the corridor of the Bank of England when the directors are holding their weekly meeting, and when there is a likelihood of an alteration in the rate. . . . When the messenger comes out with the placard announcing an alteration in the rate, or 'No Change,' as the case may be, there is a general helter-skelter back to the various offices, and the result is cabled and telegraphed over the whole of the commercial world."

[5] *Interviews*, etc., p. 22. The Bank of England has eleven branches, all of which are located in England.

[6] The principle of considering the Bank rate as a minimum rate was inaugurated on March 18, 1845. See Gibson, *Bank Rate: the Banker's Vade Mecum*, p. 55.

[7] Withers, *The Meaning of Money*, p. 223.

not an absolute minimum. The Bank does occasionally discount prime bills for its best customers at a rate which is below the Bank rate.[8] The Bank rate then may or may not be a true index of the discount rate which is actually being charged by the Bank, for it is impossible to say how far the published rate is being adhered to.[9] At best it is simply the minimum rate at which the Bank is ready to discount certain types of bills provided financial conditions warrant its doing so.

The Character of Paper Discounted by the Bank of England. The character of the paper which the Bank of England may discount is not prescribed by law, but is regulated by the court of directors as a part of their administrative duties.[10] The Bank discounts bankers' bills, trade or finance, only for those having accounts with it,[11] on which there must appear two British names, of which one must have been the acceptor.[12] Bills payable in foreign currencies are never discounted.[13] Ordinarily the Bank will not take bills having more than four months to run, though under exceptional circumstances it will take bills which mature in six months;[14] the average life of the bills discounted ranges from forty to fifty days. The directors have placed no minimum or maximum requirements on the size of the bills which they will discount, the average being about £1000.[14]

Lombard Loans. In addition to the discounting of approved bills, loans are granted for periods varying from seven days to three months, subject to possible renewal, on acceptable securities.[14] The advances range in size from one hundred to hundreds of thousands of pounds.[14] The classes of collateral ac-

[8] This practice was begun in February of 1878. See *Interviews*, etc., p. 23; Palgrave, *Bank Rate and the Money Market*, p. 55.

[9] See Palgrave, *Bank Rate and the Money Market*, p. 55.

When asked by representatives of the National Monetary Commission to what extent the Bank adhered to their official rate in discounting bills, the officials replied: "The rates for discount and loan transactions usually approximate more or less closely to the bank rate." *Interviews*, etc., p. 23.

[10] *Interviews*, etc., p. 20.

[11] *Ibid.*, p. 21. In times of financial stress the Bank will discount for others as well. *Interviews*, etc., p. 28.

[12] *Ibid.*, p. 20.

[13] *Ibid.*, pp. 22 and 23. The Bank of England will not discount bills drawn in foreign currencies, for it is its object to have as much of the world's trade as possible financed by means of sterling. To discount foreign bills would defeat this object and encourage the financing of trade through some other center.

[14] *Ibid.*, p. 20.

ceptable are "the various classes of marketable securities quoted on the London Stock Exchange, with the exception of mining shares, . . . also, with discretion, good securities, not so quoted, when their value can be ascertained." [15] For such loans and advances the Bank usually charges a rate of interest ½ of 1% above the Bank rate.[16]

It is impossible to state the proportion of the loans extended by the Bank of England to the bills discounted. Both items are included in the amount given in the balance sheet of the banking department, under the title of "Other Securities." The details of this item have not been made public since 1875, though a knowledge of them would be of considerable service to business men and students of banking.[17]

The Latitude Allowed the Bank of England in its Discount Policy. As we have seen, the law allows the directors of the Bank of England much latitude in the management of their discount policy—they themselves determine the character of the paper they will discount and the type of securities they will accept as collateral for loans. The directors of the Bank of France and of the Reichsbank are allowed much less discretion, as the law prescribes quite definitely many of the rules which they must follow in the discounting of paper or in the granting of loans.

The Bank Rate in France. The board of directors (the Regents) alone determine changes in the discount rate of the Bank of France, the Governor having no power to alter the rate.[18] Contrary to the practice followed by the Bank of England, the Bank of France never discounts above or below its official rate.[19] The same rate of discount prevails at the branches as at the head office in Paris.[20]

[15] *Interviews*, etc., p. 20. Only meager details are known of the nature of the securities taken as collateral. "What is known about them is principally derived from Hankey's book on the *Principles of Banking* published 1867. . . . Guided by his remarks, we may suppose a portion of the securities to consist of railway debenture stocks, securities of colonial governments, corporation stocks, and other securities more or less of a permanent character. But nothing is known about their composition with certainty." Palgrave, *Statistics for Great Britain, Germany and France*, published by the National Monetary Commission, Senate Document No. 578, 61st Congress, 2d Session, p. 85.

[16] Withers, *The English Banking System*, p. 7.

[17] *Interviews*, etc., p. 19.

[18] There are fifteen regents elected by the two hundred largest shareholders. The Governor is appointed by the President of France. *Ibid.*, p. 191.

[19] *Ibid.*, p. 227.

[20] *Ibid.*, p. 198.

Though the Regents determine the changes and the Governor cannot alter the rate, it is only since the 9th of June, 1857, that the Bank of France has been allowed by law to raise its rate of discount to any height it saw fit; prior to that time, the rate could not exceed 6%.[21] Before 1857 changes in the discount rate were few and far between. Thus from 1820 to the 14th of January, 1847, the rate remained at 4%. Whenever the demand for discounts increased to an extent which would endanger the reserve, the Bank discounted bills of a shorter duration or refused to discount altogether.[22] The bad harvest of 1846, resulting in the exportation of large amounts of specie to pay for imports of grain, forced the Bank to raise its rate on the 14th of January, 1847, to 5%. On the 27th of December, the rate was lowered to 4%, and remained at that figure, even during the revolution of 1848, until March 5, 1852, when it was again lowered to 3%. The Bank found it impossible to maintain the rate at that figure, so during 1853 it was raised to 4%, and fluctuated between 4 and 5% until the crisis of 1857. During this crisis, under the sanction of the new law allowing a higher rate than 6%, the rate was changed in all eight times, and was raised as high as 9%. The Bank was severely criticised for the policy it had followed in this crisis, in changing the rate of discount frequently and in raising it to such an

[21] The Bank was permitted to raise its discount rate above 6% by article 8 in the law of June 9, 1857, which read:—

La Banque de France pourra, si les circonstances l'exigent, élever audessus de 6 pour 100 le taux de ses escomptes et l'intérêt de ses avances.

Les bénéfices qui seront résultés, pour la Banque, de l'exercice de cette faculté, seront déduits des sommes annuellement partageables entre les actionnaires et ajoutés au fonds social.

The law may be found printed in full in Wolowski, *La Question des Banques*, pp. 451–452.

In commenting upon this act Wolowski states (p. 286) that such action was necessary because: "*L'expérience et l'exemple de L'Angleterre avaient appris que toute limite imposée à l'escompte était préjudiciable à la sécurité des banques et au maintien de l'encaisse métallique.*"

At the present time "there does not exist any law fixing the maximum rate of discount in any of the important European states. During the development of the central-bank system attempts have at times been made to keep money rates low by compelling the central bank not to charge more at any time than a given rate. History shows, however, that such attempts have invariably ended in failure, and the fact is now generally accepted that the fixing of a maximum rate kills the efficiency of a modern financial system." Warburg, *The Discount System in Europe*, p. 26.

[22] Mayne, *Der Discount*, p. 113.

unprecedented height. The critics claimed that the Bank had done this solely in the interests of the shareholders.[23] From that time on the Bank rate fluctuated much less violently and never again was raised so high.[24]

Eligible Paper. The Bank of France is not allowed by law to discount commercial paper which runs for a longer period than three months.[25] Subject to this restriction the Bank "discounts for every one who has obtained the opening of a current account, bills of exchange, checks, bills to order, and commercial and agricultural warrants of fixed maturity, . . . which bear the signature of three persons, tradesmen, agricultural syndicates, or others, known to be solvent." [26] The Bank is also "authorized to accept paper bearing two signatures when the third signature has been replaced by a deposit of securities belonging to one of the classes of securities admitted for loans, or by a warehouse receipt." [26] In the case of bills bearing two signatures, both must represent persons domiciled in France, while in the case of bills bearing three signatures, at least two must have been given by Frenchmen.[26] While the Bank of France discounts the paper of the commercial and industrial classes directly, by far the larger part of its portfolio is composed of paper which has been endorsed by a bank.[27] Unlike the joint stock banks in London, the banks in France do not feel that there is any stigma attached to the rediscounting of their paper with the Bank of France. Should the joint-stock banks in London require funds, they customarily secure these by calling the loans which they have made to discount houses thus forcing them to discount their portfolios with the Bank of England. "The discount houses, therefore, act as a shuttle between the joint-stock banks and the Bank of England." The average life of the bills discounted at the Bank of France in 1907 was twenty-six days, while the average value was seven hundred thirty-two francs.[27] The average value of the bills of exchange in France is much lower than the average value of the bills in Germany or England,[28] the number of bills which

[23] *Sivers*, p. 95.

[24] The present policy of the Bank of France according to Nitti, is never to raise the Bank rate unless conditions are most exceptional. Nitti, *Essai Sur Les Variations du Taux de L'Escompte*, p. 384.

[25] *Interviews*, etc., p. 197.

[26] *Ibid.*, p. 195.

[27] *Ibid.*, p. 197. The minimum value of bills admitted to discount was lowered in 1898 to 5 francs, and the number of small bills discounted by the Bank has steadily increased since then.

[28] See Mayne, p. 69. There are several reasons for the large number

are drawn for ten, fifteen and twenty francs being very numerous. Bills drawn in foreign currencies may be discounted, a privilege which has been used at times quite effectively.[29]

Lombard Loans. The Bank of France also advances loans up to 60 or 80% of the value of certain approved securities. The "securities which may be admitted as collateral are limited by the laws and decrees which govern the Bank and include collateral of easy conversion into cash," which usually must be "guaranteed by the State, the departments, municipalities or French colonies."[30] The interest rate charged by the Bank on loans is usually 1% above the Bank rate.[31]

The Bank Rate in Germany. At the Reichsbank the rate of discount is fixed by the Directorium,[32] though in so doing it usually seeks the advice of the Central Ausschuss.[33] Since 1896, the same rate has been charged on all bills, none being discounted above or below the official rate.[34]

The types of bills which the Reichsbank may discount are prescribed quite definitely by law. Though the bills may be secured or unsecured, "they must not exceed three months in time, and there must be on the bill the names of at least two parties known to be solvent."[35] The Reichsbank may and in fact does discount a large number of bills drawn in foreign currencies.[36] It does not discount the bills of its customers alone, but "listens to every one who comes for accommodation, whether he has an ac-

of small bills in France, as compared with the number in England or Germany. In the first place, France is not as highly developed commercially or industrially as Germany or England and therefore her operations are on a much smaller scale. Further, the Bank of France discounts vast quantities of bills for the tradesmen of France, who prefer bills of exchange, and it is quite natural that a larger proportion of her portfolio should be for small amounts. See *The European Discount System—Possible Advantages of its Adoption in the United States*, by Ralph H. Hess and Le Roy D. Godfrey, *Moody's Magazine*, August and September of 1912, p. 116.

[29] Liesse, *Evolution of Credit and Banks in France*, p. 231.

[30] *Interviews*, etc., p. 195.

[31] *Ibid.*, p. 198; also, Liesse, pp. 131–134. The Bank of France has frequently extended interest-free advances against imports of gold.

[32] The Directorium is the body which actually manages the Bank and is composed of 9 members appointed by the government for life.

[33] The Central Ausschuss is composed of 15 shareholders elected annually at the shareholders' meeting. This body meets once a month and acts in general as an advisory board to the Directorium.

[34] *Interviews*, etc., p. 343.

[35] *Ibid.*, p. 339.

[36] *Ibid.*, p. 354.

count or not."[37] With the exception of farmers' paper, bills are not renewed.[38] In 1910 the average life of the bills discounted was twenty-eight days,[39] and the average size 2071 marks.[40]

The Reichsbank is permitted to make Lombard loans on the following types of securities:

(1) gold and silver.
(2) government and municipal bonds, and the shares, debentures, and bonds of railways of nearly every kind in the Reich.
(3) securities of foreign governments, and securities of foreign railway if guaranteed by the government in question.
(4) bills receivable that are of a character satisfactory for the Bank to discount.
(5) bonds of mortgage companies.
(6) merchandise, when located within the Reich.[41]

"The loan rate of the Reichsbank is generally 1% higher than its discount rate. Though from March, 1884, to July, 1897, loans upon imperial and state obligations were given a preferential rate of only ½ of 1% higher than the discount rate. For the occasional loans upon the precious metals interest, if charged, is reckoned at the official discount rate."[42] In 1910 the average maturity of the Lombard loans was but ten days.[43]

A STATISTICAL STUDY OF FLUCTUATIONS IN THE BANK RATE IN ENGLAND, FRANCE AND GERMANY

Palgrave's Studies. English economists and bankers have devoted considerable attention to statistical studies of fluctuations in the Bank rate, possibly on account of the frequent variation of the rate in their own country. None, however, has given as much thought or time to this subject as Sir R. H. Inglis Palgrave. The results of his studies were first published in 1880 in a work entitled, "Bank Rate in England, France and Germany 1844–78."[44] In later works, he included studies of the Bank rates in Holland and Belgium, and enlarged and added to

[37] *Interviews, etc.*, p. 343.
[38] *Ibid.*, p. 342.
[39] *Die Reichsbank—1876 bis 1910*, p. 152.
[40] *Ibid.*, p. 131.
[41] *Interviews*, etc., p. 344.
[42] *Statistics for Great Britain, Germany and France*, p. 201.
[43] *Die Reichsbank—1876 bis 1910*, pp. 168–169.
[44] Published by Effingham Wilson, London.

his very comprehensive and exhaustive statistical tables. In the following paragraphs we shall draw largely from his studies.

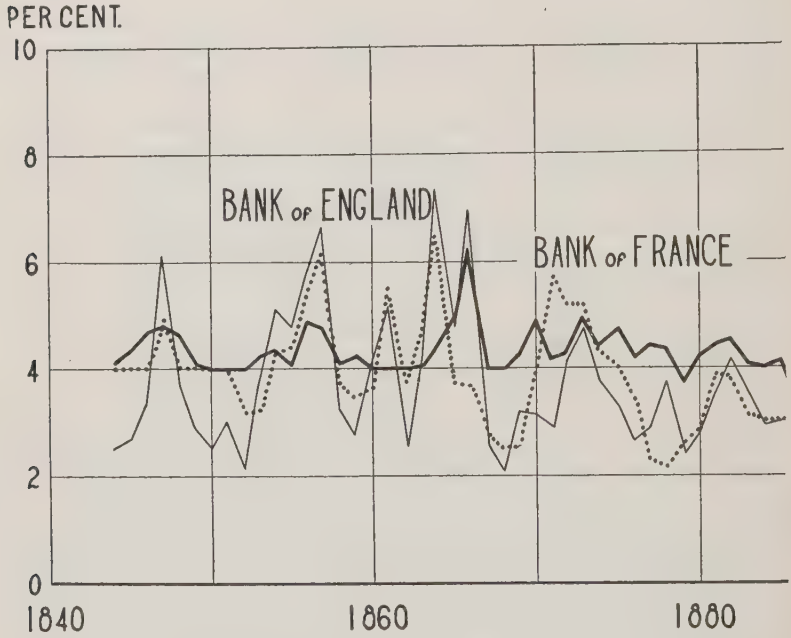


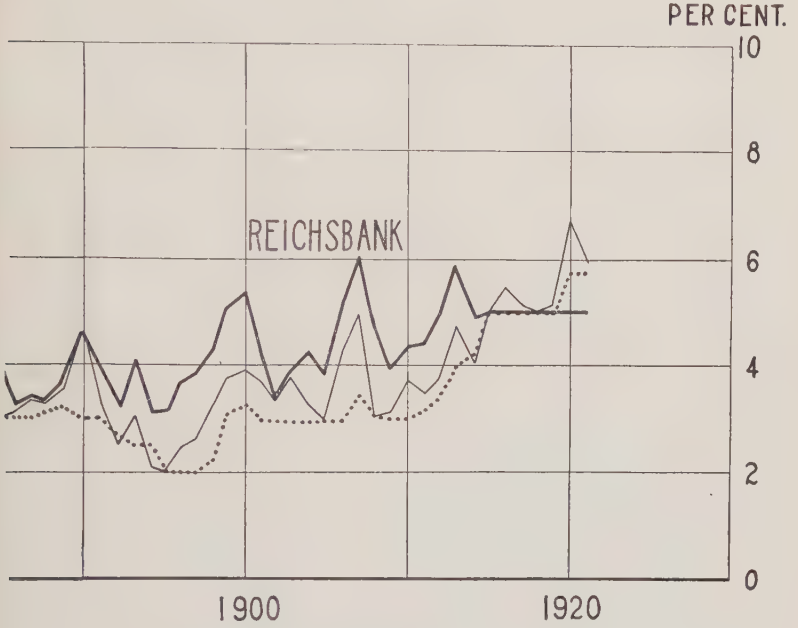
CHART III: FLUCTUATIONS IN THE AVERAGE ANNUAL BANK RATE AT

In any statistical comparison of Bank rates recorded as ruling in various money centers, the meaning and significance of these rates must be constantly borne in mind. We have noted that the published rate at the Bank of England may or may not be a true index of the rate which is actually being charged on the majority of the bills discounted. The Bank rates in France and Germany are much more significant.

In the accompanying chart we have represented the average rate which has prevailed at the Bank of England, the Bank of France and the Reichsbank [45] for each year since 1844. It will be observed that the English and German rates have fluctuated much

[45] The Reichsbank has as a matter of fact been in existence only since the 31st of December, 1875, when the Bank of Prussia with an enlarged sphere and altered constitution became the Reichsbank. The Bank of Prussia itself dates back only to the 31st of December, 1846, when the Royal Bank, which had been founded by Frederick II, King of Prussia, in 1765, was reconstituted as the Bank of Prussia. For the sake of simplicity we adopt the fiction that the Imperial Bank dates from 1844.

more than the French, which has tended, especially during the latter half of the period, to remain stationary for years at a time.[46]



THE BANK OF ENGLAND, THE BANK OF FRANCE AND THE REICHSBANK.

[46] Sources of data for chart:

1. *England:*
   - 1844–1905—*Statistics for Great Britain, Germany and France,* pp. 134 and 143.
   - 1906–1921—*The Financial Review.*
2. *Germany:*
   - 1844–1907—*Statistics for Great Britain, Germany, and France,* pp. 140 and 197.
   - 1908–1921—*Statistisches Jahrbuch für das Deutsche Reich.*
3. *France:*
   - 1844–1869—*Statistics for Great Britain, Germany, and France,* p. 137.
   - 1870–1907—*The Bank of France in Relation to National and International Credit* by Maurice Patron, pp. 29–30.
   - 1908–1910—*Statistisches Jahrbuch für das Deutsche Reich,* 1911, p. 64.*
   - 1911–1913—*Statistisches Jahrbuch für das Deutsche Reich,* 1914, p. 67.*
   - 1914–1918—*Statistisches Jahrbuch für das Deutsche Reich,* 1919, p. 25.*
   - 1919–1921—*The Financial Review.*

The mean of all the average yearly rates for the entire and for separate periods are given in the following table:

ARITHMETIC MEAN OF OFFICIAL DISCOUNT RATES prevailing at the

	Bank of England	*Bank of France*	*Reichsbank*
Period:			
1844–1849 (inc.)	3.55%	4.16%	4.45%
1850–1859	3.97	4.20	4.27
1860–1869	4.30	3.92	4.38
1870–1879	3.35	3.87	4.40
1880–1889	3.31	3.78	3.91
1890–1899	2.96	2.50	3.86
1900–1913	3.72	3.16	4.58
1914–1921	5.32	5.09	4.98
1844–1921	3.778	3.673	4.344

It will be noted that the German rate throughout the entire period has ruled higher than either the French or the English.

Helfferich's Studies. In his very excellent work, entitled *Die Reform des deutschen Geldwesens*, Karl Helfferich states that such a table as the above is apt to lead to erroneous conclusions regarding the actual average heights of the three rates. "The correct criterion for a comparison of the interest which is actually demanded by various banks," he states, "is rather the average yield of the funds invested in bills of exchange. Even in the case of those banks, which discount at their official rate only, the average yield of the funds, invested in bills of exchange, represents more correctly the average discount rate, than an average [such as the above] reckoned according to the duration of the individual rates. The average rates depend then less on the duration of the individual rates than on the volume of the exchange discounted at the separate rates."[47] Both the Reichsbank and the Bank of France publish statistics giving the average yield of the bills of exchange which they have discounted through the course of a year. The bank of England furnishes no information on this subject, which is unfortunate, as its Bank rate is the most meaningless of the three. In a table which Helfferich presents[48] and which is reproduced here, the annual differences between the average yield of bills discounted at the

[47] Helfferich, *Die Reform des deutschen Geldwesens*, II, p. 501.
[48] *Ibid.*

Reichsbank and the Bank of France are shown to be somewhat less than the differences between the official discount rates.

Year	Average Yield on Bills of Exchange Discounted by *The Reichsbank* I	*The Bank of France* II	*Column I minus column II*	*Differences between the official Bank rates*
1881	4.2%	3.9%	+0.3%	+0.6%
2	4.4	3.9	+0.5	+0.8
3	3.9	3.1	+0.8	+1.0
4	2.7	2.8	—0.1	+1.0
5	3.8	3.1	+0.7	+1.1
6	2.8	3.0	—0.2	+0.3
7	3.1	3.0	+0.1	+0.4
8	2.8	3.1	—0.3	±0
9	3.2	3.1	+0.1	+0.5
1890	4.3	3.0	+1.3	+1.5
1	3.8	3.0	+0.8	+0.8
2	2.8	2.7	+0.1	+0.5
3	3.6	2.5	+1.1	+1.6
4	2.8	2.5	+0.3	+0.6
5	2.7	2.1	+0.6	+1.0
6	3.4	2.0	+1.4	+1.7
			Average difference =+0.54	Average difference =+0.84

Assuming that Helfferich's contention is correct, it would appear that the actual French rate was not as far below other Bank rates as the official rate would indicate.

Rates on Lombard Loans. In discussing the administration of the Bank rate we found that all three Banks charge a rate of interest on Lombard loans higher than the Bank rate. At the Bank of England the interest on loans is ordinarily ½ of 1% above the Bank rate, while in the case of the other two banks it is 1% above. In the accompanying tables there is presented the average yearly loan rate of the Reichsbank from 1876–1900, as well as a classification of the security behind the Lombard loans and their average duration. It will be noted that the loan rate through this period was 1% above the official discount rate, except from 1884–1897 when the loan rate on imperial and state bonds was only ½ of 1% above.[49]

[49] Source: *Die Reichsbank—1876 bis 1910*, p. 209.

INTEREST RATES AT THE REICHSBANK

Year	Loans on Collateral: Against Imperial and State Bonds	Loans on Collateral: Against other securities and commodities	Official Discount Rate
1876		5.154%	4.16%
7		5.421	4.42
8		5.339	4.34
9		4.701	3.70
1880		5.240	4.24
1		5.418	4.42
2		5.543	4.54
3		5.047	4.05
4	4.500%	5.000	4.00
5	4.618	5.118	4.12
6	3.779	4.279	3.28
7	3.908	4.408	3.41
8	3.824	4.324	3.32
9	4.176	4.676	3.68
1890	5.017	5.517	4.52
1	4.276	4.776	3.78
2	3.703	4.203	3.20
3	4.569	5.069	4.07
4	3.617	4.117	3.12
5	3.639	4.139	3.14
6	4.156	4.656	3.66
7	4.556	4.806	3.81
8		5.267	4.27
9		6.036	5.04

THE LOMBARD LOANS OF THE REICHSBANK CLASSIFIED ACCORDING TO SECURITY [50]

Year	On Stocks and Bonds	On Bills of Exchange	On Commodities	On Precious Metals
1905	84.8%	10.0%	5.2%	.....
1906	77.3	18.0	4.7	.....
1907	74.3	21.7	4.0	.....
1908	77.1	17.5	5.4	.....
1909	77.3	16.7	5.9	.....
1910	75.2	20.3	4.5	.....

[50] Source: *Die Reichsbank—1876 bis 1910*, pp. 168–169.

AVERAGE DURATION IN DAYS OF LOMBARD LOANS AND OF DISCOUNTED DOMESTIC BILLS OF EXCHANGE [51]

Year	*Lombard Loans*	*Domestic Bills of Exchange*
1905	11	35
1906	10	33
1907	10	32
1908	10	34
1909	11	30
1910	10	28

Reasons for the Discriminatory Rates on Lombard Loans. There are two strong reasons which have motivated central reserve banks in establishing discriminatory rates on Lombard loans. A desire to curb speculative tendencies which become rampant during a period of prosperity and which exaggerate cyclical movements is the first reason. It is generally agreed, that the funds extended by a central reserve bank in the form of Lombard loans are more apt to be used for speculative purposes than funds secured from discounting bills of exchange which represent actual commercial transactions.[52] Secondly, Lombard loans are not self-liquidating as are bills of exchange. They are frequently renewed, and only too often take the form of capital loans.[53] Especially during periods of financial stress Lombard loans are hard to realize upon and become tightly frozen. In a crisis, borrowers are frequently unable to repay the funds advanced to them upon securities and as security prices invariably

[51] Source: *Die Reichsbank—1876 bis 1910*, pp. 152 and 167.

[52] "Infolge dieser längeren Dauer des Lombarddarlehens, durch welche die Kapitalien der Bank auf längere Zeit festgelegt werden und somit die erforderliche Flüssigkeit beeinträchtigt wird, muss der Zinsfuss, in den ferner noch die Unkosten der Versaltung des Pfandobjekts eingerechnet werden, höher sein als der Diskont. Endlich wird aus dem bankpolitischen Gesichtspunkte der Satz im Lombardverkehr stets höher gehalten als der Diskont der Bank, um das Darleihgeschäft auf bewegliche Pfänder, nicht ein Übergewicht über das Wechselkreditgeschäft erlangen zu lassen, da ersteres, ein Übermass betrieben, leicht zu Überproduktion oder Spekulation führen kann. . . . Unter den Diskont zu sinken, ist aber dem Lombardzinsfuss wegen der geringeren Liquidität im Beleihungsgeschäft garnicht möglich." Mayne, p. 88.

[53] So thoroughly have the officials of the Reichsbank been convinced of this, that not only do they charge a higher rate of interest on Lombard loans, but they do not issue notes based on these.

fall, the central reserve banks are left in the position of being unable to sell the securities hypothecated with them, unless at a great sacrifice and risk of disaster. This was aptly illustrated in America during the panic of 1907. At that time it was found that call loans could not be called, and as the banks dared not sell the securities which had been hypothecated as collateral, a considerable proportion of the assets of the New York City banks became tightly frozen.[54] Because, then, borrowers use the proceeds obtained from Lombard loans frequently for speculative purposes, and because such loans are not self-liquidating,[55] the

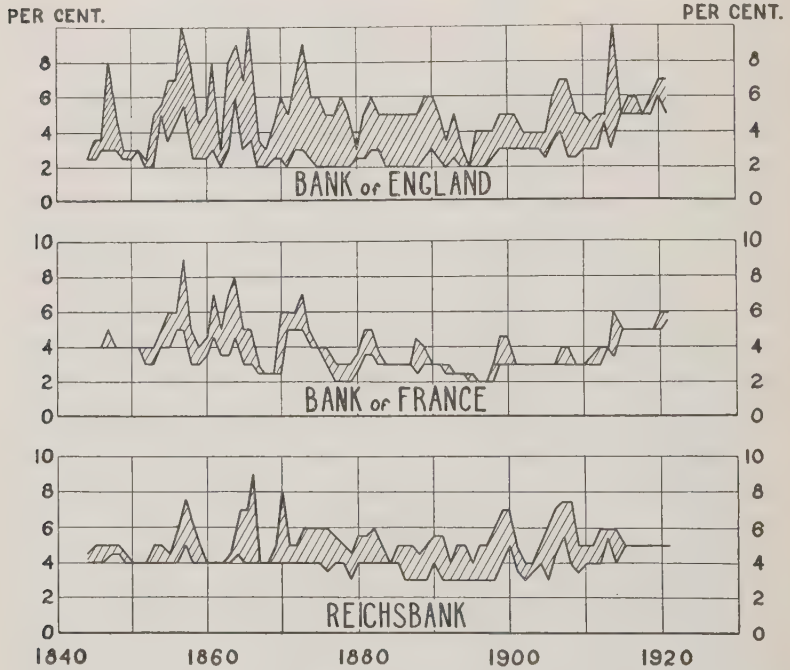


CHART IV: SPREAD BETWEEN THE MAXIMUM AND MINIMUM BANK RATES EACH YEAR AT THE BANK OF ENGLAND, THE BANK OF FRANCE AND THE REICHSBANK.

[54] See Sprague, *History of Crises under the National Banking System*, p. 301.

[55] The term self-liquidating when applied to commercial paper means that the completion of the transaction, which gave rise to the commercial paper, retires it. Thus, if a trade acceptance is drawn by a seller of a stock of merchandise on the buyer, which he accepts and pays at maturity,—the payment of the acceptance at maturity by the buyer would

three central banks, which we are studying, have discriminated against them.[56]

Maximum and Minimum Bank Rates. The maximum and minimum discount rates prevailing each year since 1844 at the three central reserve banks are shown in the accompanying chart. The spread between the maximum and minimum rates at the Bank of England has been much wider than between the corresponding rates of the other two banks, a fact which has called forth a great deal of discussion from English writers regarding remedial measures.[57]

Alterations in the Bank Rates. As revealed in the table [57] on the following page, the English rate is the one which has been most frequently altered. In 1873 it was changed twenty-four times, or on an average of twice a month, and in only four years during the period studied (i. e., from 1844–1923) was it not changed at all. The French rate is very steady, there have been thirty-five years since 1844 during which it was not altered.

REASONS FOR FLUCTUATIONS IN THE BANK RATE

From 1844 to the outbreak of the Great War, as shown in the above table, there was only one year, 1851, during which not one of the three central reserve banks changed its rate of discount. Even as recently as the year 1907, there occurred seven alterations in the English rate and four in the German. Frequent fluctuations in Bank rate are, in fact, a distinguishing characteristic of modern discount policies as contrasted with the discount policies of central reserve banks prior to 1844.

Though the factors which necessitate alterations in the Bank rate are very numerous, as was found in tracing the origins of the discount policy of the Bank of England, for all practical purposes they may be summarized as follows:

at one and the same time retire the acceptance and complete the underlying transaction which gave rise to it.

[56] See Ernst, *Diskontopolitik*, p. 793.

[57] See p. 78, note ‡172.

Sources: England, France, Germany — 1844–1909—*Statistics for Great Britain, Germany, and France*, pp. 134, 137 and 140.
France — 1910–1918—*Annuaire Statistique*, 35th Volume, p. 82*.
France — 1919–1921—*The Financial Review*.
Germany, England — 1910–1921—*The Financial Review*.

NUMBER OF CHANGES EACH YEAR IN OFFICIAL RATES OF DISCOUNT IN ENGLAND, FRANCE AND GERMANY

Year	*Bank of England*	*Bank of France*	*Reichsbank*	*Year*	*Bank of England*	*Bank of France*	*Reichsbank*
1844	..	..	1	1836	7	..	5
5	2	..	2	7	7	..	2
6	1	..	2	8	9	4	2
7	9	2	1	9	8	2	4
8	3	..	2				
9	1	..	1	1890	11	..	3
				1	10	..	4
1850	1	..	..	2	4	1	2
1	..	..	..	3	12	..	3
2	2	1	..	4	2	..	2
3	6	1	1	5	..	1	1
4	2	2	1	6	3	..	3
5	8	2	1	7	6	..	5
6	7	2	4	8	6	1	6
7	9	8	6	9	6	2	7
8	6	4	5				
9	5	2	2	1900	6	4	3
				1	6	..	4
1860	11	1	..	2	3	..	3
1	11	7	..	3	3	..	2
2	5	4	..	4	2	..	1
3	12	8	1	5	3	..	7
4	15	11	4	6	6	..	5
5	16	6	5	7	7	2	4
6	14	7	8	8	6	2	6
7	3	2	..	9	6	..	3
8	2	..	..				
9	7	..	1	1910	9	..	3
				1	4	1	2
1870	10	4	5	2	4	2	4
1	10	2	2	3	2	..	2
2	14	1	1	4	8	4	5
3	24	4	7	5	..	..	..
4	13	2	4	6	1	..	..
5	12	..	5	7	2	..	..
6	5	1	6	8	..	..	..
7	7	1	7	9	1	..	..
8	10	1	3				
9	5	2	5	1920	1	1	..
				1	4	1	..
1880	2	2	5	2	4	1	4
1	6	2	3	3	1	..	4
2	6	3	4				
3	6	1	1				
4	7	..	..				
5	7	..	3				

(1) the first reason for an elevation of the Bank rate arises from the desire on the part of a central reserve bank to protect its reserve against foreign drains of gold, and conversely to encourage imports of capital and of specie. As foreign drains are usually occasioned by unfavorable exchanges, the desire to check an efflux of specie is likewise a desire to correct the exchanges.[58]

[58] Lotz asserts (*Diskontopolitik*, p. 505) that the need for gold is no longer as important a cause for raising the rate as it formerly was, due to the increased gold production since 1896. On the other hand the of-

(2) a second reason for an elevation of the Bank rate is the desire on the part of a central reserve bank to curb domestic speculative and inflationary tendencies.

(3) the Bank rate is lowered when the purpose of its rise has been realized and when it has become completely out of touch with the market rate; or in order to stimulate business and commercial activity during a business depression through "cheap" money, and to bring about a feeling of optimism in the business world which a low Bank rate is likely to induce.[59]

It must not be thought that the reasons for elevating the rate as given above operate singly. Such is not the case. More frequently the Bank rate is altered because of combinations of these various forces. An efflux of specie abroad, for instance, may have resulted from unfavorable exchanges, which themselves were caused by high prices brought about through domestic speculation. If such were the case, the Bank rate would be raised with the object of not only correcting the exchanges but of checking the domestic inflationary tendencies as well. The Reichsbank has made a very interesting attempt, set forth in the following table, to assign reasons for the fifty-eight upward movements in its discount rate from 1876 to 1910 inclusive.[60]

REASONS FOR INCREASES IN THE RATE OF DISCOUNT AT THE REICHSBANK, 1876–1910

Total Number of Increases	*Against gold outflows or to correct unfavorable exchanges*	*Against a rising domestic demand for funds*	*Against both a domestic and foreign demand for funds*
58	13	28	17

Of the twenty-eight times the Bank rate was raised to counteract a domestic drain, twenty of these occurred after 1896, the year in which prices in the gold standard nations of the world began to turn upward. The reason for this is obvious. A period of ris-

ficials of the Bank of England stated in 1909 (*Interviews*, etc., p. 26) that the object of raising the Bank rate was to prevent gold from leaving the country or to attract gold to England. Hepburn and Anderson likewise emphasize (*The Gold and Rediscount Policy of the Federal Reserve Banks*, pp. 5 and 34) this motive as a reason for raising the Bank rate.

[59] See *Interviews*, etc., p. 26.

[60] *Die Reichsbank—1876 bis 1910*, p. 222.

ing prices is generally one of rapid business expansion, in which speculative tendencies are apt to predominate unless checked by a restraining influence on the part of central reserve banks in the form of higher Bank rates.

Changes in the Reserve Percentage of Central Banks not the Sole Motive for Changes in the Bank Rate. Inasmuch as

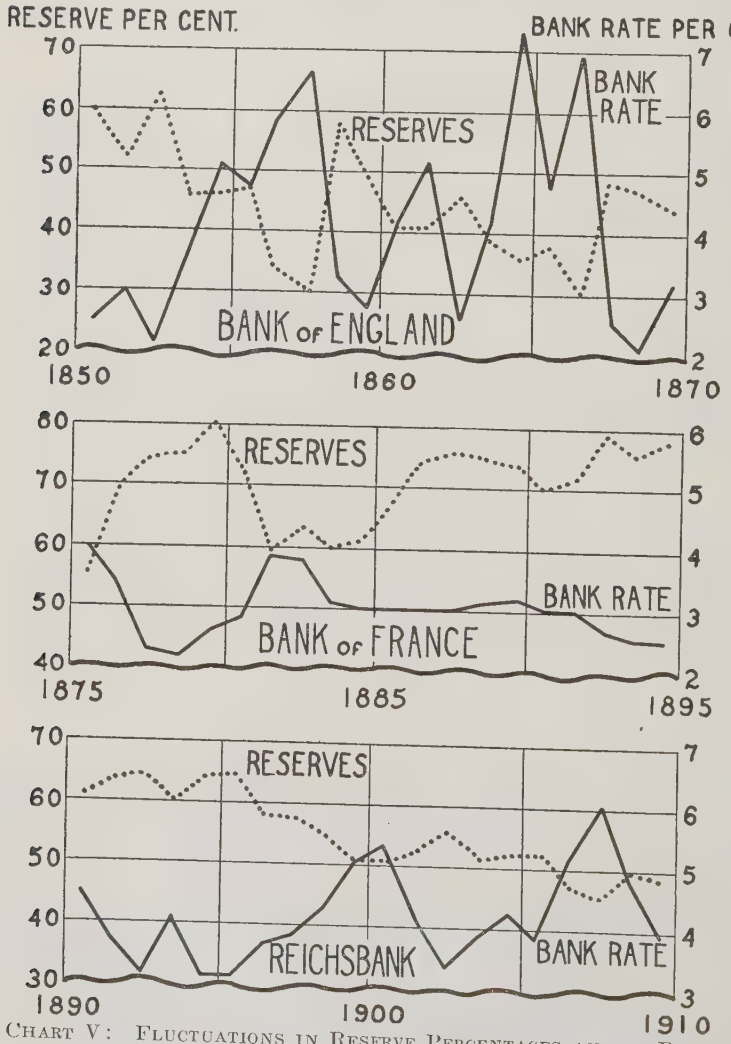


Chart V: Fluctuations in Reserve Percentages and in Bank Rates at the Bank of England, the Bank of France and the Reichsbank.

the gold stock of the European nations (aside from the amount in circulation) is concentrated in the central banks of issue, domestic and foreign drains of gold fall directly upon them and in so far as gold is withdrawn their reserves are depleted. This has led some bankers to assert that the only reason for variations in the Bank rate are increases or decreases in the reserves of central reserve banks. While the fluctuations in the Bank rates do bear a high inverse correlation to fluctuations in the percentage of reserves, as shown in Chart V, changes in the reserve percentage of central banks are not and should not be the sole motive for changes in the Bank rate.[61] The reserve percentage should not be the only determinant for one of the most valuable services a central reserve bank can perform is the checking of domestic speculation, and reducing the amplitude of business cycles. No matter how high the reserve percentage may be, a central reserve bank should raise its rate, whenever it becomes necessary to prevent speculative tendencies from running rife.

Influence of Foreign Drains. The desire on the part of a central reserve bank to check foreign drains of gold and to rectify unfavorable exchanges, resulting from an unequal balance of payments, has in the past been an important factor leading to higher Bank rates. In the accompanying table there is illustrated the effect of unfavorable exchanges and of changes in the amount of the gold reserves on the Bank rate in Germany from 1906 to 1908.[62]

FLUCTUATIONS OF THE BANK RATE IN GERMANY COMPARED WITH CHANGES IN THE AMOUNT OF RESERVES, AND WITH CHANGES IN SIGHT RATES OF EXCHANGE ON LONDON, PARIS AND NEW YORK

Year	*Date of Change*	*From—To*	*Amount of Gold Reserve on nearest date to date of change Millions of marks*	*Sight Exchange Rates On Date of Change on*		
				London	*Paris*	*New York*
1906	Jan. 18	6% – 5%	709	20.420	81.35	419.00
	May 23	5 – 4½	814	20.480	81.35	421.75
	Sept. 18	4½ – 5	643	20.435	81.10	421.00
	Oct. 10	5 – 6	492	20.420	81.15	420.50
	Dec. 18	6 – 7	560	20.460	81.10	421.75
1907	Jan. 22	7 – 6	664	20.475	81.20	421.25
	April 23	6 – 5½	726	20.455	81.15	420.75
	Oct. 29	5½ – 6½	550	20.495	81.65	422.50
	Nov. 8	6½ – 7½	531	20.525	81.55	420.75
1908	Jan. 13	7½ – 6½	617	20.475	81.35	421.25
	Jan. 25	6½ – 6	671	20.480	81.35	420.50

[61] Sources: *Statistics for Great Britain, Germany, and France,* pp. 194, 82–83, and 293.

[62] *Die Reichsbank—1876 bis 1910,* pp. 218–219.

Year	Date of Change	From–To	Amount of Gold Reserve on nearest date to date of change Millions of marks	Sight Exchange Rates On Date of Change on		
				London	Paris	New York
	March 7	6 – 5½	683	20.445	81.25	420.25
	April 27	5½ – 5	724	20.425	81.35	418.75
	June 4	5 – 4½	775	20.385	81.20	418.50
	June 18	4½ – 4	828	20.380	81.15	418.25

Reasons for Foreign Drains. Seasonal importations of food stuffs, domestic crop failures,[63] higher interest rates prevailing in foreign countries, are among the many economic forces rendering the balance of payments unequal, and the exchanges unfavorable.[64] In the accompanying chart the effect of seasonal importations of commodities (food stuffs, cotton, wool, etc.) in the Fall of the year from the New World upon mark exchange is illustrated.[65]

Sterling exchange is also ordinarily low in the fall, low by

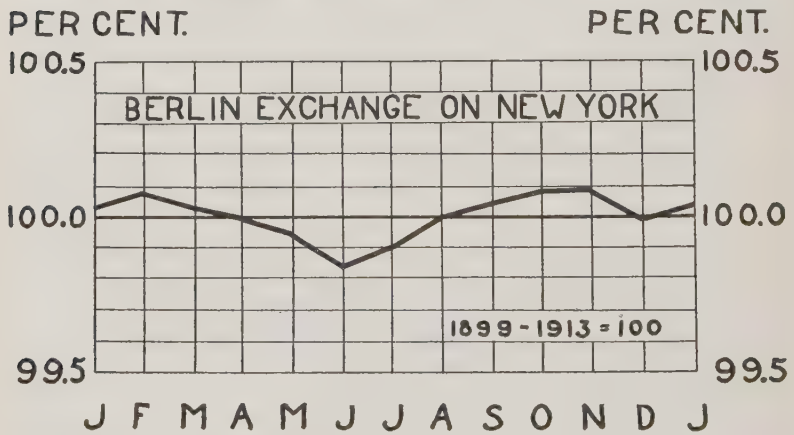


Chart VI: Seasonal Variation of Berlin Exchange on New York. (The Mark Is Depreciated when the Line Rises above 100).

[63] As in England in 1846, see Chapter I, p. 23.

[64] As guardians of the ultimate banking reserve of the country (for the joint stock banks in Europe keep only till money in their own vaults, and what reserves they maintain are kept as deposit accounts with their central reserve bank), and as protector of its gold stock, the central reserve banks are directly responsible for the maintenance of their gold reserves at a figure high enough at all times to insure the immediate convertibility of their obligations. See Bagehot, *Lombard Street*, p. 163.

[65] Source: *Statistisches Jahrbuch für das Deutsche Reich.* Seasonal

reason of the heavy imports of raw materials. It has usually been necessary for England at that time to export gold to correct the exchanges. In the following table the plus signs stand for an excess of gold imports into England during the month in question and the minus signs for an excess of exports. In the fifteen years covered, exports of gold have been most numerous in October and imports in February and May.

ENGLAND'S MONTHLY GOLD BALANCE [66]
1899–1913

J	F	M	A	M	J	J	A	S	O	N	D
8+	13+	12+	11+	13+	11+	10+	12+	3+	1+	8+	7+
7—	2—	3—	4—	2—	4—	5—	3—	12—	14—	7—	8—

Unfavorable exchanges, resulting from seasonal importations, higher interest rates prevailing in foreign countries, etc., however, are not the sole cause of foreign drains. Political or military expenditures abroad, the exportation of capital,[67] wars between foreign powers, currency reforms or financial crises in foreign countries [68] may cause an efflux of gold even when exchanges are quite favorable.[69] On such occasions the demand for gold, on the part of the foreigner, may be so very intense, that he will be willing to pay any price for it.

Influence of Bank Rate on Foreign Drains. The power of the Bank rate (if effective and high relative to the Bank rates prevailing in other nations) to correct unfavorable balances of payments,[70] check gold exports, rectify the foreign

fluctuations in the exchanges have been smoothed off to a very considerable extent through hedging. See Kemmerer, *Bankers Can Check Depressions*, New York Evening Post, October 24, 1921, p. 11; and Landmann, *Die Principien der Diskontpolitik*, p. 160.

66 Source: Volkswirtschaftliche Chronik.

67 The exportation of capital from England caused the drain of 1825, see p. 12.

68 Thus in August of 1893, $50,000,000 went from London to New York, though the dollar exchange was at the gold export and not gold import point. Landmann, pp. 172–173.

69 In this connection, see Gibson, *Bank Rate—the Banker's Vade Mecum*, p. 8; Heiligenstadt, pp. 454 and 455; and Mill, *Principles of Political Economy*, Volume II, p. 231.

70 An elevation of the Bank rate will of course correct only temporarily unfavorable balances of payment. If the factors causing an unfavorable balance of payments are more permanent in nature, such as decreased production, the Bank rate could not correct the exchanges. Thus at the present time (1922) Austria is not able to produce sufficient goods to pay

exchanges, and prompt imports of specie has as already noted been quite generally recognized since 1857.[71] The officials of the Bank of England presented a concrete illustration of the ability of the Bank rate to accomplish this very thing before the representatives of the National Monetary Commission, who were sent to Europe to investigate the organization and operation of the central banks of a number of countries. Through the Fall of 1907 the Bank had found it necessary to raise its rate several times to check the efflux of gold, which was being exported to America because of the financial crisis there. From the 31st of October, when the percentage of reserves to deposits stood at 39.9% and the Bank rate at 5½%, the rate was advanced by successive steps, until on the 7th of November it stood at 7%. This advance in the rate not only stopped the drain, but during the succeeding month prompted the inflow of gold from as many as twenty-four countries, and raised the reserve percentage to 47%.[72]

The Consequences of a Rise in Bank Rate. The economists [73] who wrote before the exportation of capital had become so common as now declared that a high bank rate rectified the exchanges through depressing commodity prices in the nation in question, thereby increasing commodity exports and gold im-

for the imports of the articles which are absolutely needed to sustain the life of her people. This condition, causing an unfavorable balance of payments, can be rectified only through increased production or decreased consumption (if possible) by her people, and not by a high Bank rate. See Goschen, *The Theory of the Foreign Exchanges*, p. 128; Landmann, p. 162; Mayne, p. 23; and Schanz, pp. 303 and 304.

[71] See *Report* from the Select Committee on Bank Acts (1857), question #2572, and p. 23 in Appendix.

Mr. E. G. Peake in a very illuminating article published in the *Bankers' Magazine* (London) for August 1921 has attempted to determine the quantitative relations between discount rates and the rates of exchange. He found that the correlation coefficient between the average annual rates of U. S. A. and U. K. exchange and the

Rate for floating money in London = —.42
Rate for discount of three months' bank bills = —.42
Rate of discount on six months' bank bills = —.44

Negative correlations were obtained as might have been expected showing that a high exchange goes with low rates of discount. In correlating the annual average rates of U. K. and French exchange, his results were quite different and seemed to indicate that there is little if any connection between U. K. and French exchange and rates of discount in London. The gold premium policy of the Bank of France might account for this.

[72] *Interviews*, etc., p. 27.

[73] In this connection, see Sivers, pp. 90–91.

ports. Such undoubtedly is the ultimate result. An elevation in the Bank rate, however, immediately affects the invisible items in the balance of trade between nations, and mainly through its effect on these corrects the exchanges. An attempt has been made below to analyse the effects of a rise in the Bank rate on the balance of payments. An *effective* rise in the Bank rate in nation "A" above the rates prevailing in other financial centers [74] would have the following consequences:

a) The foreign bankers who formerly discounted long bills in nation "A," which had been drawn on some bank or merchant in "A," and sold sight exchange against the proceeds would cease doing this and would hold such bills as an investment. As the demand for sight exchange on "A" would continue, and as the amount offered is reduced, the value of "A's" money would rise in terms of other currencies.[75]

b) The high rates of interest prevailing in "A," would cause fluid capital from other centers to be transferred there, either through buying "A's" exchange or through selling exchange in "A" on other countries; in either case causing the exchanges to turn in favor of "A." [76]

c) The capitalists in "A," who had formerly loaned their money abroad, would cease doing this and would loan their funds at home. The demand for the foreign currencies would thus fall and their value in terms of "A's" currency would decline.

d) The higher rates of interest in "A" would cause a credit contraction there, forcing many to liquidate their holdings of securities, and so would induce foreigners to purchase bonds and stocks in "A" at their lower prices.[77]

[74] The Bank rate in "A" must necessarily be raised high enough to cover all of the expenses incident to the shipment of currency from foreign nations to "A." See Goschen, *The Theory of the Foreign Exchanges*, pp. 146–147.

[75] See Landmann, pp. 48–50; and Whitaker, *Foreign Exchange*, pp. 552–553. For a very good table showing the effects of higher interest rates, see Dr. F. Schmidt, *Die Abhängigkeit des Wechselkurses vom Zinsgeschäften und Marktzinsdifferenz*, p. 765.

[76] "A high discount rate is calculated to attract gold from abroad and to prevent a flow of gold to other countries, because it offers a favorable opportunity for the investment of international capital." *The Reichsbank, 1876–1900*, p. 295. See also Goschen, *The Theory of the Foreign Exchanges*, pp. 134, 135, 146 and 147.

[77] "If the rate of discount rises, the holders of shares, bonds, stock and other interest-bearing securities will find it profitable to employ their money in discounting bills rather than in holding the former. Hence

c) Through bringing about a credit contraction and through wiping out the profits of the marginal business men, the high rates of interest in "A," if long continued, would force entrepeneurs to throw their products on the market and so would depress commodity prices and stimulate commodity exports.[78]

Factors Determining the Effectiveness of the Bank Rate. It must not be thought that the elevation of the Bank rate will invariably and automatically correct the exchanges and stimulate imports of gold. Such results will not follow unless the rise is an effective one. The power of a Bank rate to correct the exchanges is purely a relative concept, which can not be subjected to quantitative measurements. The Bank rate is more effective in some countries than in others, more effective at different times in the same country. The credit standing of the nation in which the central reserve bank is located, its importance as a

sales will take place, with the result of sending down the prices of securities and increasing the purchasing power (value) of money with respect to them." Pantaleoni, *Pure Economics*, p. 236.

[78] "Bei einem hohen Stande des Diskonts nämlich, d. h. also dass Darlehen teuer sind, sehen sich die Verkäufer genötigt, die Preise ihrer Produkte herabzusetzen, und ebenso, und zwar bedeutend schneller und intensiver, werden die Kurse der Fonds Sinken." Mayne, pp. 21–22.

The Cunliffe Committee described the effect of a rise in the Bank rate in England before the war in the following terms:

When the exchanges were favorable, gold flowed freely into this country and an increase of legal tender money accompanied the development of trade. When the balance of trade was unfavorable and the exchanges were adverse, it became profitable to export gold. The would-be exporter bought his gold from the Bank of England and paid for it by a cheque on his account. The Bank obtained the gold from the Issue Department in exchange for notes taken out of its banking reserve, with the result that its liabilities to depositors and its banking reserve were reduced by an equal amount, and the ratio of reserve to liabilities consequently fell. If the process was repeated sufficiently often to reduce the ratio in a degree considered dangerous, the Bank raised its rate of discount. The raising of the discount rate had the immediate effect of retaining money here which would otherwise have been remitted abroad and of attracting remittances from abroad to take advantage of the higher rate, thus checking the outflow of gold and even reversing the stream.

If the adverse condition of the exchanges was due not merely to seasonal fluctuations, but to circumstances tending to create a permanently adverse trade balance, it is obvious that the procedure above described would not have been sufficient. It would have resulted in the creation of a volume of short-dated indebtedness to foreign countries which would have been in the end disastrous to our credit and the position of London as the financial center of the world. But the raising of the Bank's discount rate and the steps taken to make it effective in the market neces-

short-term financier of international trade, and the degree of control of the Bank rate over the market rate are among the many variable factors determining the effectiveness of the Bank rate.

The first and one of the most vital factors in determining the ability of the Bank rate to correct the exchanges is the credit of the country concerned and its readiness to redeem its obligations at all times in the gold coin of the realm. The English rate is usually more successful in stimulating capital and gold imports than any other Bank rate in the world. As has been remarked, in 1907, such imports were stimulated from no less than twenty-four countries. Its great magnetic power is in part the consequence of the indubitable credit of the United Kingdom and of the Bank. English securities are eagerly purchased by the investing public. The economic strength of the Empire, the stability of the government, the financial policies of Parliament are factors con-

sarily led to a general rise of interest rates and a restriction of credit. New enterprises were therefore postponed and the demand for constructional materials and other capital goods was lessened. The consequent slackening of employment also diminished the demand for consumable goods, while holders of stocks of commodities carried largely with borrowed money, being confronted with an increase of interest charges, if not with actual difficulty in renewing loans, and with the prospect of falling prices, tended to press their goods on a weak market. The result was a decline in general prices in the home market which, by checking imports and stimulating exports, corrected the adverse trade balance which was the primary cause of the difficulty.

When apart from a foreign drain of gold, credit at home threatened to become unduly expanded, the old currency system tended to restrain the expansion and to prevent the consequent rise in domestic prices which ultimately causes such a drain. The expansion of credit, by forcing up prices, involves an increased demand for legal tender currency both from the banks in order to maintain their normal proportion of cash to liabilities and from the general public for the payment of wages and for retail transactions. In this case also the demand for such currency fell upon the reserve of the Bank of England, and the Bank was thereupon obliged to raise its rate of discount in order to prevent the fall in the proportion of that reserve to its liabilities. The same chain of consequences as we have just described followed and speculative trade activity was similarly restrained. There was therefore an automatic machinery by which the volume of purchasing power in this country was continuously adjusted to world prices of commodities in general. Domestic prices were automatically regulated so as to prevent excessive imports; and the creation of banking credit was so controlled that banking could be safely permitted a freedom from State interference which would not have been possible under a less rigid currency system. *First Interim Report of the Committee on Currency and the Foreign Exchanges after the War*, pp. 3–4.

tributing to the popularity of British securities. Should a rise in the Bank rate depress prices of British bonds, foreign capital would flow in eager to take advantage of this opportunity of purchasing, at bargain prices, gilt-edged securities. Not since the Rump Parliament (May, 1660) has a moratorium been declared in England,[79] and since 1821 the liabilities of the Bank have been readily and unconditionally convertible into gold.[80] Investors in British bonds know that both the interest and principal will be paid in gold, and holders of sterling bills are confident that they may secure gold through discounting such bills in London. Because of the credit standing of England and of her financial institutions, a rise in the Bank rate precipitates a demand for British securities and sterling bills.

London an International Short-Term Creditor. The second factor accounting for the effectiveness of the London rate is her very important position as a short-term international creditor. Ninety per cent. of the world's trade is financed via the London discount market, which "discounts long bills drawn upon itself in vast quantities from all over the world."[81] Bankers in every land stand ready to buy sterling drafts for they know that these can be readily discounted in London and that no difficulty will be experienced in selling sight drafts against the proceeds.[82] A rise in the Bank rate thus will induce foreign bankers to hold their sterling bills, instead of discounting them as is customary and selling sight drafts against the proceeds. Since the demand for sight sterling continues and since the supply has diminished, sterling exchange rises in the money centers of the world. The ability of a central reserve bank to correct the exchange depends, in part, then upon the extent to which foreigners are induced to hold bills

[79] This chapter, it should be remembered, is being written from the point of view of pre-war facts. A moratorium was resorted to in England during the Great War. By a proclamation issued on August 6, 1914, payments which came due before September 4 in respect to bills of exchange, negotiable instruments, or contracts drawn, dated, or made before August 4 were postponed for one month from their due date. By subsequent proclamations the moratorium was extended to December 3. See *Economist*, War Supplement, December 19, 1914. Since 1914 the Bank of England has also suspended cash payments.

[80] "London is the only European center which is always prepared to honor its drafts in gold immediately and to any extent." Withers, *The English Banking System*, p. 16; see also the *Bankers' Magazine* (London), September 1906, p. 328.

[81] Whitaker, p. 555.

[82] See Escher, *Foreign Exchange Explained*, Chapter III.

drawn against such a country as investments. Few bills will be held abroad if the nation in question plays a subordinate rôle in financing international trade and lacks a well developed discount market.[83]

Bank Rate Ineffective Unless Controls Market Rate. No matter how important a nation may be as a short term international creditor, no matter how sound and excellent is its credit or the credit of its central reserve bank; the elevation of the Bank rate will be ineffective in correcting the exchanges, in preventing domestic speculation or in reducing the amplitude of cyclic fluctuations unless the market rate[84] advances with the Bank rate. For example, if the Bank rate were to be raised for the purpose of bringing about a contraction of credit, and if at the same time the market rates were uninfluenced by this action, the desired result would not be attained for borrowers would still have recourse to the general bankers at the lower rates of interest. What affects the foreign exchanges directly then is the open market rate, or group of rates, and not the Bank rate in and of itself,[85] for a rise in the Bank rate will induce imports of gold only in so far as it raises the outside rates.[86]

[83] During the crisis of 1866 the elevation of the English Bank rate failed utterly to attract gold, practically the only time it has failed to do so since 1821. From May 11 to August 6, 1866, a discount rate of 10% had been maintained by the Bank, which was higher by 6% than the rates prevailing in Paris, and "yet the exchange, instead of rising, fell as far as it was possible for it to fall." . . . "For full three months continental bankers could have bought the best London acceptances at a price which would have returned them 9 or 10% and yet, so low had our credit fallen that they preferred to employ their money at home at 3 or 4%." (Clare, pp. 97–98.) Despite the continuance of the high Bank rate the bullion in the Bank decreased. (Ernest Seyd, *Bullion and Foreign Exchanges*, p. 568.) The credit of England had suddenly fallen so low as to dissuade the foreigner from exporting his capital there. The Bank act had been suspended on May 11, 1866. The significance of this act was not understood abroad. The foreign capitalists felt it might forecast a moratorium or a suspension of cash payments. As long as the foreigner felt that the credit of England was impaired he would not export his capital there, but when assured that his fears were groundless, foreign capital flowed in.

[84] The market rate is the rate charged by acceptance houses, discount corporations, bill brokers, commercial paper houses, joint stock banks, general banks and the private investor on the type of paper acceptable for discount at the central reserve bank. See Moulton, *The Financial Organization of Society*, pp. 606–608.

[85] Whitaker, p. 548.

[86] See Steele, p. 352; also "Denn nur bei einer Übereinstimmung

Previous Influence of Bank Rates in Europe. The Bank rates in Europe used to wield greater influence over the market rates than has been the case within the past generation. This was true for the bill holdings of the central reserve banks, relative to the bills held outside, were so large as to make them the dominant factor in the money market. At the time Bagehot wrote "Lombard Street," [87] for example, he stated that the market could not discount all of its sterling bills without the help of the Bank. A rise in the Bank rate would invariably force up the market rates then,[88] for the Bank was the "most important dealer in money" [89] and possessed to a certain extent the power of a monopolist.[90]

The rapid growth of the joint stock banks, the acceptance houses and the bill brokers, coupled with an increasing number of foreign banks in London, all of them eager to discount sterling bills, has within the past three decades seriously weakened the influence of the Bank of England in the bill market and impaired its ability to control the market rate.[91] Similar forces have been

---

zwischen Bankdiskont und Marksatz wird eine Diskonterhöhung der Bank den Erfolg haben, Metall aus dem Auslande heranzuziehen." Mayne, p. 98.

[87] Published in 1873.

[88] See Withers, *The Meaning of Money*, p. 228.

[89] Bagehot, p. 114. The former power and influence of the Bank rate is graphically described in the *Economist*, for Saturday, June 18, 1864, p. 765, in an editorial entitled, *The Power of the Screw.*

[90] It must not be thought that a central reserve bank can (independent of underlying conditions) arbitrarily determine and set the interest rate in a country as many popular writers suppose. Even the most powerful central reserve bank could not do that. In fixing its discount rate, a central bank must take cognizance of the market rate. The Bank rate should normally rule above the market rate, but not so far above that the Bank loses all touch with the market, and at times a central reserve bank must and can intervene in the market and within narrow limits can regulate the market rate. (See Bagehot, p. 319; Landmann, p. 109; and *The Reichsbank—1876 to 1900*, p. 207.)

[91] The following table illustrates the declining importance of the portfolios of the three central reserve banks:

GERMANY—DISCOUNTS

	Joint Stock Banks	*Reichsbank*	*Per cent. of total*
	Marks	Marks	
1888	574,485,000	430,869,000	75%
1907	2,895,304,000	1,104,537,000	38.1

operative in Germany and to a lesser extent in France.[92] By reason then of the rapid increase in the resources of the general bankers, coupled with the fact that the restrictions which govern the character of paper which a central reserve bank may discount are much more rigid than the requirements of commercial banking, the bulk of discounting in normal times in England and Germany is done by the general banks and bankers.[93] However, in periods of very active demand for funds, when the lending power of the market has reached its limit and when it must have recourse to the central bank for funds, or when the payment of taxes sweeps a large amount of money into the coffers of the Bank to the credit of the government, central reserve banks exercise a decided control over the market rate even at the present time.[94]

Expedients Used in Forcing up Market Rates. In order to bring about a credit contraction and prevent an undue efflux of gold, the Bank of England and the Reichsbank, by reason of their diminished influence, have found it necessary to resort to a variety of expedients in order to force up the rates in the open market at a time when the general bankers and banks failed to see the need for a contraction of credit and were possessed of sufficient funds themselves so that they did not have to rediscount with the central reserve bank.[95] One of the methods used

England—Discounts, Loans and Advances

	London Clearing Banks	*Bank of England*	*Per cent. of total*
1889	£119,438,000	£20,670,000	16.8%
1908	287,727,000	33,035,000	11.1

France—Discounts, Loans and Advances

	Principal Banks Francs	*Bank of France* Francs	*Per cent. of total*
1888	1,254,701,000	1,114,822,000	88.8%
1908	3,826,700,000	1,971,945,000	51.5

[92] The portfolio of bills held by the Bank of France is still very large relative to those held by other banks in France, in fact, so large that the Bank of France never employs artificial means to force up the market rates of interest. See Landmann, p. 111; and *Interviews*, etc., p. 217.

[93] "Lombard Street is frequently able to ignore Bank rate, knowing that it will easily be able to supply its needs from the other banks, at rates which are normally below it." Withers, *The English Banking System*, p. 18.

[94] *Ibid.*, p. 19.

[95] See Bagehot, p. 319.

by the Bank of England in forcing up the market rates has been to sell consols to or to borrow money from the open market, thereby mopping up the surplus funds in the market and causing the market rates to rise.[96] Were the Bank to borrow funds from the joint stock banks, for example, it would secure the proceeds by debiting the reserve account of those banks, and would in this way reduce their balances and curtail their credit extending power in proportion to the extent to which their reserves had been reduced.[97] The Reichsbank has employed the same tactics in making its rate effective. It has either sold its holdings of Imperial Treasury bills or by using them as collateral has borrowed from the large German banks, thereby reducing the loanable funds in the market and forcing up the market rates of interest.[98]

Hartley Withers declares[99] that such methods, as have been described above, for mopping up the surplus funds from the market are expensive and clumsy, and could be obviated if the joint stock banks would agree not to loan money to the bill brokers or any one else at a figure lower than ½ of 1% above the rate of interest paid to depositors. As the deposit allowance rate is

[96] When the Bank sells consols with this object in mind, it is understood, that it will buy them back on account. Whitaker, p. 547. The Bank does not sell consols or borrow money directly from the banks, but conducts its operations through a broker (*Interviews*, etc., p. 51). For further comments on this practice of the Bank of England, see Ayre, p. 593.

[97] See Withers, *Meaning of Money*, p. 229.

In the *Bankers' Magazine* (London) for March 1906 (p. 356) there is given a very interesting account of the Bank of England making its rate effective. "On September 28 [1905] the Bank Rate here was raised to 4%, and later, in October, many were anticipating a 5% official minimum. About that time, however, the Bank conceived the idea that a 5% rate, with its prejudicial effects upon the trade of the country, could be avoided if the 4% rate were made completely effective, and accordingly some large sums were borrowed from two or three of the joint-stock banks, with the result that rates in the open market rapidly hardened, and, indeed, during the greater part of October the official minimum was completely effective."

[98] "In the treasury bills the Reichsbank has a convenient means of obviating the great difference between the rate of private discount and the rate of Reichsbank when this difference reaches a certain point." *German Bank Inquiry of 1908*, p. 1026.

In October of 1904 the Reichsbank rediscounted 80,000,000 marks of Treasury Bills in an attempt to make its rate effective. Conant, *The Principles of Money and Banking*, Volume II, p. 235. See also Prion, p. 99.

[99] Withers, *The Meaning of Money*, p. 240.

usually set at a figure 1½% below the Bank rate, such an agreement would result in fixing the market rate about 1% below the Bank rate.[100] Such an agreement has never been reached among the English bankers.[101] It is believed, however, that the Reichsbank has at times appealed to the larger German bankers as a matter of patriotic duty to advance their rates as the Bank rate rose, in order that the efforts of the Reichsbank to correct the exchanges would not be nullified.[102]

The Private Discount Rate. The desirability of a central bank intervening in the market when conditions warrant such action, and of forcing up the market rates of interest by artificial means has been indicated. Such intervention is rendered difficult, and such control can not be exercised unless a central reserve bank is constantly in touch with the money market, unless it has built up a portfolio of the finest bills which can readily be sold, in case it becomes necessary to mop up the surplus funds of the market.[103] To obtain this intimate relationship with the money market, and to acquire a portfolio of the finest bills, the Reichsbank and the Bank of England have at one time or another discounted the best bills at a rate below their official discount rates—at the private discount rate.[104] Without a private discount rate, a central bank, whose

[100] Dr. Landmann has found (p. 110) that on the 416 days the three central reserve banks rendered returns from 1890 to 1897, that the Bank rates in Paris and Berlin were, generally speaking, ½ of 1% above the market rate, whereas in London the Bank rate was generally 1 to 1½% above the market rate. From his tabulations he concluded that the Bank of France had the greatest degree of control over the market rate, the Reichsbank had the next, and the Bank of England the least. If Withers' suggestion were adopted the Bank rate would control the market rate to a larger extent than it did from 1890 to 1897.

[101] Such an agreement could only with difficulty be reached among the London bankers because of the fact that they are strong competitors.

[102] See Lotz, p. 510. The German Bank Act, passed on June 7, 1899, forbade the private banks of issue from discounting below the Reichsbank rate as soon as this rate reached or exceeded 4%, and at other times from discounting under the official rate by more than ¼ of 1%. If the Reichsbank should announce in the *Reichsanzeiger* its plans to discount at the private rate, the private note issuing banks could discount by not more than ⅛ of 1% under that rate. This clause was inserted in the act as the bill holdings of the private note issuing banks amounted to about ⅓ of the bill holdings of the Reichsbank, and they could therefore frustrate the Reichsbank's efforts to contract credit in the interest of inland or foreign trade, by granting cheap credit. *The Reichsbank, 1876 to 1900*, pp. 346–349.

[103] See Kemmerer, *The A B C of the Federal Reserve System*, note on pp. 42–43.

[104] See Landmann, pp. 117–120. The Bank of France has never dis-

operations cover a whole nation and whose official discount rate rules at or above the highest market rates on eligible paper, will not acquire a portfolio of prime bills [105] and will lose contact with the movements of the money market. The reason is that the market rate in a large country with a great diversity of industries varies considerably from place to place; being much lower in the financial centers than in the interior. A Bank rate, which equaled the market rate in the hinterland, would ordinarily be so much above the rates in the financial centers, that the central reserve bank would do little discounting there, and the paper in its portfolio would consist largely of the bills of the smaller merchants and not those of the financial barons.[106] The sway of a central bank over the market will be the greater, the more it follows the movements of the money market, the more that its portfolio consists of the finest paper, and "the more the demand for credit becomes accustomed, even in times when money is plentiful, to seek and find satisfaction at its hands." [107]

The Private Discount Rate in England and Germany. Since February of 1878 [108] the Bank of England has discounted the prime bills of such of its customers, as had good accounts, at a rate which was below the Bank rate. Statistics have never been published of the amount of bills discounted under the Bank rate, or of the proportion that they bore to the bills discounted at or above the Bank rate. In January of 1880, the Reichsbank, following the lead of the Bank of England [109] began to discount the finest bills also at a rate below the Bank rate. This practice was at first limited to those branches where there was a bourse-like trade in bills, but was later extended to all independent branches to meet the wishes of many Chambers of Commerce.

counted below the Bank rate (*Interviews*, etc., pp. 198 & 199). Its operations are so extensive that it can keep in touch with the market and control the market rates without doing this. Landmann, p. 193.

[105] See Mayne, p. 96.

[106] See Landmann, p. 101; and Plenge, p. 197.

[107] *The Reichsbank, 1876 to 1900*, p. 137. See also Lotz, p. 500.

[108] Palgrave, *Bank Rate and the Money Market*, p. 48. See also *Interviews*, etc., p. 23.

[109] *The Reichsbank, 1876 to 1900*, pp. 134–137.

"Teils um noch innigere Fühlung mit dem Diskontomarkte, der sie für gewöhnlich unterbietet, zu bewahren, teils auch um in Zeiten der Geldfülle Diskontomaterial von bester Qualität sich zu sichern, ohne deshalb den offiziellen Satz zu sehr herabsetzen zu müssen, pflegen sowohl die Bank von England wie die deutsche Reichsbank und die österreichisch-ungarische Bank Wechsel auch unter dem Banksatze anzukaufen." Lotz, p. 500.

The sub-branches were permitted to discount the best bills at a rate which was below the Bank rate but higher than the private rate. At first, the branches were allowed to fix their own preferential rate, provided, however, that this was not lower than the current rate on the Berlin or Frankfort bourses. In April of 1880, this privilege was withdrawn and the private rate was thereafter fixed by the Directorium and made uniform for all branches. Furthermore, it was decreed that the bills which were discounted at the private rate must have at least six weeks to run, and could not be for amounts less than 3000 marks save in very exceptional cases, and must have a very high credit capacity. The Reichsbank has never purchased bills below the Bank rate in Berlin itself. Since 1881 purchases at the private rate have always been discontinued when the official rate rose to 5% or above, or when the foreign exchanges were unfavorable. A statistical summary of the operations of the Reichsbank at the private rate is presented in the following table: [110]

PRIVATE DISCOUNT RATE AT THE REICHSBANK

Year	*Average Rate for Time in Existence*	*Days—Private Rate in Force*
1880	2.800%	170
1	3.295	231
2	3.624	185
3	3.351	340
4	3.245	350
5	3.114	288
6	2.416	348
7	2.534	343
8	2.375	323
9	2.352	273
1890	3.521	76
1	....	...
2	2.271	339
3	2.582	200
4	2.064	346
5	2.075	267
6	2.463	61

No bills have been purchased at the private rate since April of 1896.[111] The opposition voiced by the bankers, who feared the

[110] *Die Reichsbank—1876 bis 1910*, pp. 132–133.
[111] Lotz, p. 500.

competition of the Reichsbank, and by the small business man, who felt that the larger concerns were alone able to secure the lower rate and that he was being discriminated against, was so strong as to compel the Reichsbank to abandon discounting bills at the private rate.[112] In testifying before the representatives of the National Monetary Commission, the officials of the Reichsbank stated that bills were no longer discounted at the private rate, for "it was thought that a great central institution like the Reichsbank, with its tasks and duties to the whole of the community, ought not to make any distinction of any class, or make an exception in favor of any one. It is the policy of the Reichsbank to serve all alike."[113] The officials denied that there had been any opposition among the general bankers to the private rate! Economic considerations had led the Reichsbank to introduce their private rate of discount; political pressure forced them to abandon it.

The reasons which would lead a central reserve bank to purchase bills below the Bank rate may be summarized as follows:[114]

1) To acquire a portfolio of the best bills which can be sold to the joint-stock banks and so be used to raise the market rates of interest, when economic conditions warrant intervention in the market. Such a portfolio cannot be acquired if a central reserve bank discounts at its official rate alone (which ordinarily rules at or above the highest market rate on eligible paper) by reason of the variations in the market rates between various sections of a country, and in the same section at different times.

2) To force down interest rates in sections where they are being maintained at artificially high levels by agreements among the local bankers.

3) To invest its resources to an extent necessary to pay its expenses.

[112] See *German Bank Inquiry*, p. 290; and *The Reichsbank, 1876 to 1900*, pp. 135, 136, 349 and 350.

The revised German bank act of June 7, 1899 provided that on and after January 1, 1901, the Reichsbank could, if it so desired, discount under its official rate, if the official rate did not stand at 4% or above. If it did so discount, the private rate must be published in the *Reichsanzeiger*. This provision has not been made use of by the Reichsbank.

[113] *Interviews*, etc., p. 343.

[114] See Landmann, p. 193; also Friederich, pp. 32 and 33.

SUBSTITUTES FOR ELEVATIONS OF THE DISCOUNT RATE EMPLOYED BY CENTRAL RESERVE BANKS

The effectiveness of the Bank rate in rectifying the exchanges, in checking foreign drains of gold, and in reducing imports of specie varies considerably from nation to nation and in the same nation at different times, dependent as it is upon the credit of the respective nations, the degree to which the Bank rate controls the market rate, and the extent to which the nation in question is a short-term international creditor. The fact that the Bank rate may be absolutely powerless, at times, as a regulator of the exchanges or that central reserve banks have been unwilling, because of political reasons, to use this method of protecting their reserves has led to the adoption of numerous substitute measures for the accomplishment of the same purpose. Among the more prominent measures taken by central reserve banks, when they were unable or unwilling to accomplish the same result by elevating the Bank rate are: the adoption of a gold premium policy, the redemption of their notes in light weight coins or their redemption solely at the head office of the bank, the use of "moral" pressure and the holding of a portfolio of foreign bills.

A Gold Premium Policy. A gold premium policy may be either active or passive.[115] It is said to be active when a central reserve bank purchases gold at a premium, or grants interest-free advances on imports of gold; and passive, when a central reserve bank exacts a compensation for redeeming its obligations in gold coin or bullion.

The Active Gold Premium Policy. All of the important nations of the world have, at one time or another, employed the active gold premium policy, they have either purchased gold at a premium or granted interest-free advances on gold imports. Thus in England, since the passage of the Peel Act, all persons "are entitled to demand notes in exchange for bar gold at the rate of £3 17s. 9d. per ounce standard, subject to such gold being melted and assayed at the expense of the seller by persons approved by the bank."[116] At times, when it was desirable to induce imports of gold, the Bank has paid as high as 78s. an ounce.[117] Foreign gold coins are purchased by the Reichsbank, without requiring that they be assayed or melted, at prices which it sets forth

[115] See Mayne, p. 106.
[116] *Interviews*, etc., p. 29.
[117] See *German Bank Inquiry*, p. 324.

periodically in its tariffs.[118] The price is altered whenever the Bank may wish to encourage the importation of specie.[119] The Bank of France employs the same practice.[120]

Interest-free Advances. Another method of stimulating imports of specie, which is closely analogous to the above, is the practice of granting interest-free loans against gold imports. England, France and Germany have regularly done this, as is borne out by statements made by the officials of these banks before representatives of the National Monetary Commission:

Testimony of the officials of the Bank of England:

> Question. Is it customary . . . to advance money without interest to importers of gold to cover the time required in transportation?
> Answer: Facilities for bringing gold have been given in the shape of free advances during transit, adequate security having been lodged.[121]

Testimony of the officials of the Bank of France:

> Q. What measures are taken by the Bank of France if it wishes to increase its stock of gold or to stimulate the importation of gold?
> A. . . . Certain intermediaries have sometimes asked us to facilitate their operations of arbitrage in precious metals by advancing money without interest for the time required in transportation. We have done so several times by crediting the importers from the day of shipment. but this operation, which had its limits in its own conditions, can not be considered as a premium for importation.[122]

Testimony of the officials of the Reichsbank:

> Q. Do you loan money without interest to people who are importing gold?

[118] See Whitaker, pp. 514–515; and Weill, p. 469.

[119] See *Interviews*, etc., p. 357.

[120] See Whitaker, pp. 510–513, and p. 558.
The Bank of France in 1855–56–57 spent 14,000,000 francs in premiums in the purchase of gold bullion to the amount of 1,274,508,519 francs ($250,000,000). Conant, *The Principles of Money and Banking*, Volume II, p. 235.

[121] *Interviews*, etc., p. 28.
"Lately, they [the Bank of England] have kept abreast of the time by following the example of the State banks of France and Germany, in allowing an importer of bullion the use of money against securities free of interest for ten or fourteen days, with the undertaking to repay in gold." Hansard, p. 415.

[122] *Interviews*, etc., p. 214.

A. Yes, that is done. We make advances without interest to importers for the time the gold is in transit; we do that even in times when the ordinary gold import point is not reached.[123]

The Reichsbank ordinarily grants interest-free advances only on imports of large amounts of gold, one million marks or more in value.[124] This practice was given unqualified praise by the economists and bankers, who were examined by the German Bank Inquiry Commission of 1908.[125] The only objection which any one raised, was that in case the gold arrived before the maturity of the loan, the rate of interest on the money market might be inordinately depressed, which would tend to negative the work of the Reichsbank if it were endeavoring to tighten the market rates of interest.[126] In addition to this disadvantage, there is the further objection, that in granting interest-free advances to importers of gold, a central reserve bank is favoring them unduly, to the exclusion of the importers of any other commodity.[127] Whether a central reserve bank purchases gold at a premium or grants interest-free advances against gold in transit, in either case, it endeavors to stimulate imports of specie through lowering the gold import point at its own expense.

The Passive Gold Premium Policy. The passive gold premium policy, i. e., the charging of a premium by a central reserve bank for the redemption of its note and deposit liabilities in gold, is practiced most generally by the Bank of France.[128]

[123] *Interviews*, etc., p. 357.

"So far back as 1879, when Germany stopped selling silver, the Reichsbank began to make advances against gold in transit, free of interest. At first these loans were granted for five or eight days, subsequently for longer periods—according to the provenance of the gold—and lately even for periods of more than six weeks. The Reichsbank admits the need for precaution lest advances should be made on gold which would find its way there anyhow, or which might merely pass through Germany in transit to another country." *Renewal of the Reichsbank Charter*, p. 34. See also *The Reichsbank 1876 to 1900*, pp. 236 and 275.

[124] *The Reichsbank 1876 to 1900*, p. 237.

[125] See *German Bank Inquiry*, pp. 337, 426, 457, 458, and 556.

[126] *Ibid.*, p. 457.

[127] The practice of endeavoring by these means to build up the gold stock of a nation is a survival of mercantilist doctrines. Secretary of the Treasury Shaw in 1903 employed much the same tactics in inducing gold imports into America. See Sprague, *History of Crises under the National Banking System*, p. 231.

[128] The Reichsbank and the Bank of England have at times sold foreign gold coins at a price above the mint par. This did not mean that they had adopted the gold premium policy for they continued to redeem their

The gold premium policy of the Bank of France has been defined by Landesberger and Helfferich as a "variable compensation which the Bank of France exacts for redeeming its obligations in gold coins or bars instead of in current silver."[129]

The Bank of France is allowed by law to redeem its notes either in French gold coin or in 5 franc silver pieces,[130] both of which possess unlimited legal tender power. This means that the Bank is not compelled to redeem the silver coins in gold. If a bullion arbitrageur should seek to redeem his notes in gold, the Bank would have the legal right to refuse him French gold coin and offer him silver. Should he insist upon gold, the Bank might be willing to sell him gold in bars or foreign gold coins at a premium. The Bank charges a premium only on gold bars or foreign gold coins, never on French gold coins.[131] Nor must it be thought that the Bank invariably charges a premium for the delivery of gold to bullion arbitrageurs. Whether it does so or not depends upon the purpose of exporting the specie. If it can be assured that the gold is desired for purchasing grain, cotton or essential commodities from abroad,[132] the Bank frequently redeems its notes at their full value in gold. For example, it became necessary, because of the deficient harvest, for France, in 1898, to import a larger amount of food stuffs from America than was ordinarily the case. The Bank charged no premium on the gold used to purchase these commodities, but did charge a premium up to .8 of 1% on the gold which was intended for other purposes. The official rate of the premium is never published, and therefore exact data concerning its height are not available, but from the best authorities we are led to believe that it ranges from .4 to .8 of 1%.[133]

notes in their own gold coins at par. They sold the foreign coins as they would sell any commodity to the highest bidder. See *The Reichsbank 1876–1900*, p. 237; Rosendorff, pp. 635–636; and Schanz, p. 304.

[129] *German Bank Inquiry*, pp. 272 and 273. See also Landmann, p. 179.

[130] Lotz, p. 507; Whitaker, pp. 564–568.

[131] *Interviews*, etc., p. 216; Rosendorff, p. 635.

[132] See Lotz, p. 507; and Rosendorff, p. 634.

[133] Richter has made a careful statistical study of the gold premium policy of the Bank of France (pp. 44–47) and gives the gold premiums charged from January 7, 1892 to February 7, 1899 inclusive by weeks. The highest gold premium, as given by him, was charged by the Bank during the week of August 24, 1893, and amounted to .85 of 1%. For 162 weeks out of this period he gives no quotations, presumably no premium was charged. The accuracy of his figures as are those published weekly in *L'Économiste Français* in its partie financiere are open to question. See Rosendorff, p. 635.

Disadvantages of the Passive Gold Premium Policy. The passive gold premium policy as in use in France has been almost universally condemned by bankers and economists outside of France, as a method to be used in preventing foreign drains of gold. The remedy is considered worse than the disease itself. The following are the chief objections to the employment of the passive gold premium policy: [134]

1) The refusal of the Bank of France to redeem its notes in gold, excepting after the payment of a premium, virtually means the abandonment of the gold standard. Unless a nation, unconditionally and unhesitatingly, redeems its notes in gold at par, it cannot be said to be on the gold standard. The difference is only one of degree whether a nation refuses to redeem altogether or does so only after the payment of a premium.

2) The passive gold premium policy depreciates the French franc inordinately with reference to the currencies of gold standard nations. It is the object of the Bank, of course, in charging the premium to lower the gold export point with the hope that the forces which are depressing the exchanges may have exhausted themselves before the value of the franc has reached the new gold export point. An illustration of its effect in depreciating the franc is cited by Mr. Weill: "Thus, in December, 1887, the Berlin exchange on Paris was quoted at 80:15, and afterwards often at 80:20 and 80:25, whereas the gold point allowing of a bullion export from France is as high as 80:60; incontestably, the French currency was on the respective dates quoted at a discount." [135]

3) The depreciation of the franc, in terms of foreign currencies, raises the prices of imported commodities and to that extent renders it more difficult for the French to purchase abroad. Conversely, the foreigner is able to purchase more francs than normally, and to the extent that the prices of commodities have not advanced in France in proportion to the depreciation of the franc, the foreigner is enabled to purchase larger amounts of commodities in France and thus, to give less of his own products and labor for a larger amount of the products and labor of France.

[134] See Mayne, p. 107.

[135] N. E. Weill, *Bankers' Magazine* (London), October, 1901, p. 465. Richter has estimated that a gold premium of .4 of 1% changes the gold export point of Paris on London from 25.245 to 25.345, which means of course that the franc is depreciated lower than would be possible if France were on a gold basis. Richter, p. 38. See also Landmann, p. 184; Lotz, p. 507; and Rosendorff, pp. 644–648.

4) The gold premium policy impairs the credit of France. The uncertainty of being able to redeem his obligations in gold, makes the foreign capitalist less eager to buy bills of exchange or securities issued in francs. Hartley Withers writes: ". . . anyone who has a credit in Paris has a credit of no international value, except in so far as he can make use of it, by means of the machinery of exchange, to buy a credit in London, which is convertible into gold as a matter of course." [136]

5) The gold premium policy of the Bank of France is not an absolute preventive of outflows of gold from France, for should it became profitable enough, the gold bullion arbitrageurs would resort to gathering in the gold from circulation for export.[137] A German banker testified before the German Bank Inquiry Commission of 1908 that, "it only results in making the exporters of gold take the full-weight coins from circulation, and this in my mind is substituting a greater evil for a lesser one." [138] Should gold coins then be withdrawn from circulation, and should the Bank of France issue notes to fill the void, the result would be a redundancy of the French currency, an increasingly unfavorable balance of payments, and a continuous depreciation of the French franc.

Reasons for the Adoption of the Passive Gold Premium Policy by the Bank of France. What were the motives that induced France to employ the passive gold premium policy with all its attendant disadvantages? [139] As is so frequently the case, the adoption of this policy was dictated by political rather than

[136] Withers, *Meaning of Money*, p. 87. Similarly Goschen asks in his essays, "Why do not those who want gold go to Paris? If they go to Paris, well, on presenting their bills, if it is inconvenient to the Bank of France to pay in gold, they may be offered silver and not gold." Goschen, *Essays*, etc., p. 119. It is for this reason that the Austro-Hungarian Bank and the Reichsbank, both of which held a large portfolio of foreign bills, had few drawn on Paris. See also *German Bank Inquiry*, pp. 333, 338 and 589.

[137] Rosendorff writes (p. 648) relative to the fact that the passive gold premium does not prevent gold from being exported; "dass Frankreichs Stellung unter dem System der Goldprämie im internationalen Goldverkehr eine wesentlich ungünstigere war, als die deutschlands unter dem Einflusse der Diskontpolitik." Rosendorff also cites the fact that in spite of a premium ranging as high as .8 of 1% throughout 1898, some 69 million francs in gold were exported during the first nine months. Rosendorff, p. 638.

[138] *German Bank Inquiry*, p. 285.

[139] Many French economists have been fully aware of the disadvantages of the gold premium policy of their bank. Léon Say characterized it as a "dangereuse et nouvelle methode."

by economic considerations. France is primarily an agrarian nation, and to the peasant classes a low and non-fluctuating discount rate is the greatest desideratum. [140] Further it must be remembered that the foreign trade of France is by no means as extensive as that of either England or Germany. It is much more essential to exporters and importers, in those nations, that the value of their currency remain constant in terms of foreign currencies than that the Bank rate remain stationary. In England and Germany, the importers and exporters constitute a large and important group, while in France they are few in number and do not possess the political influence of the agrarian group.[141] Still a third reason for the adoption of the gold premium policy by the Bank of France is the fact that nearly every peasant there owns a government bond, and as "raising the rate of discount causes a fall in the value of gilt edged securities; . . . a high rate of discount would produce some kind of a national disaster; it is, therefore, of much higher importance in France to support the price of Rentes than to foster the stability of the foreign exchanges, whose alterations act only on a limited part of the population." [142]

Redemption of Notes Solely at Main Office. In case the main office of a central reserve bank is located at some distance from the frontier, still another substitute for raising the Bank rate may and has been employed to check a foreign drain; namely, the redemption of the Bank's notes solely at the main office. This action raises the cost of shipping the gold abroad and changes the gold export point to that extent. In case of an efflux of gold abroad, for instance, the Reichsbank has been known to refuse to redeem its notes excepting at its office in Berlin, thus forcing the exporter to pay the freightage to the seaport.[143] Reginald Maync has estimated that the cost of shipping gold from Hamburg to London is 2½d. per £1, which is

[140] The agrarian and bimetallist elements have suggested that the Reichsbank adopt the passive gold premium policy. Rosendorff, p. 634.

[141] Lotz, pp. 507–508.

[142] Weill, p. 466.

[143] "It has been necessary under most unfavorable conditions to limit to the imperial main bank in Berlin the withdrawal of gold for the purpose of exportation abroad; when it became necessary, in consideration of the German standard, to work against an export of gold with high discount rates, it was clearly imperative that the Reichsbank should not facilitate the exportation of gold by bearing the costs of conveyance from Berlin to the points of export, Hamburg or Bremen." *The Reichsbank 1876 to 1900*, pp. 237–238.

increased by 0.15d. per pound in case the specie is sent from Berlin.[144] The Reichsbank hopes, of course, in so altering the gold export point, that the forces which have tended to depress the mark will have become exhausted before the value of the mark falls to the new export point.

Redemption of Note and Deposit Liabilities in Light Weight Coins. The Bank of England has the same object in mind when it redeems its note or deposit liabilities in light weight coins, taking advantage of the tolerance allowed by law. The statutory weight of the sovereign is 123.27+ grains gross, but it may weigh as little as 122.5 grains and still retain its full legal tender power.[145] To an exporter, who is demanding gold, the Bank may quite legally discharge its obligations by giving him these light weight coins, thereby altering the gold export point by that amount.[146]

"Moral" Pressure. Some of the nations of the world, at the time a foreign drain is threatened, have brought pressure to bear to prevent banks and bullion arbitrageurs from exporting specie. In November of 1912, the state of the exchanges was such that London should have been drawing gold from Germany, Austria-Hungary and Russia; and yet none came.[147] The governments of those countries let it be known that they would

144 Mayne, p. 76.

145 See Whitaker, note on p. 559.

146 In this connection the testimony of Lord Swaytheling, which is given below, before representatives of the National Monetary Commission is illuminating:

Q. London is the gold center of the world, is it not?

A. Yes, because it is the only country where they pay freely in gold, but even that is now qualified in rather a small way. They have got what they call an export corner; that is, they sift out the minimum legal weight of the sovereigns and heap them up for the exporters. If they give us full-weight sovereigns we would be very glad to get them, but they will not. We now could send gold to France if we could get full-weight sovereigns, but we cannot get them. Formerly, they did not do those things.

Q. Where are the full-weight sovereigns?

A. Oh, they keep them for interior purposes. If Liverpool and Manchester banks want sovereigns they get full-weight, because freight is against us sending them from the north to the Continent. In any of the north country places you have the most beautiful, bright, heavy sovereigns which we should like to see in London, but we cannot get them. *Interviews*, etc., pp. 98 and 99.

147 The London *Statist*, November 16, 1912. See also, Hermann Schmidt, *Should the Peel Act be Modified?*

look with disfavor upon exports of gold, and the bankers dared not risk their vengeance.[148] Though the law compels the Reichsbank to redeem its notes in gold, when the danger of an export movement arises "a kind of moral pressure, a pressure from above, is put on, and every effort used to prevent the depletion of the stock of gold, pressure of a kind which no one in this country [England] would approve, pressure, too, which would be absolutely unavailable here."[149] The Reichsbank is said to have occasionally visited its resentment upon these exporters, who had the temerity to ask for gold at inconvenient seasons.[150]

The foregoing methods and expedients adopted by central reserve banks to prevent outflows of gold may be employed with success, only when the forces tending to depreciate a currency in terms of the foreign exchanges are of so little importance that they soon spend themselves. Should the forces possess greater strength and permanency, gold would eventually be exported as soon as the new gold export point had been reached. Another method of correcting the exchanges and one which does not seek to artificially change the gold points, but which endeavors to work in accord with natural forces, is what may be termed briefly and for want of a better expression the foreign bill policy.

The Foreign Bill Policy. As we have noted earlier in the

[148] Withers, *Meaning of Money*, p. 87. "In theory Berlin has a gold standard, and the notes of the Imperial Bank are theoretically payable on demand in gold. . . . But any one who wants to draw on the Imperial Bank's share to any large extent is likely to find obstacles and difficulties in his way, and is moreover likely to be met with a most discouraging countenance when next he requires accommodation."

[149] Goschen, *Essays*, etc., p. 119.

[150] "Our foremost object must be the maintenance of the exchange parities in order that our credit in the international market and the reputation of the German gold standard may not suffer, with the purpose in view of finally placing the latter beyond all doubt and on the same firm basis on which the English sovereign stands today. We may safely say that all business men agree in considering it detrimental and regrettable that no gold was sent abroad when exchange for awhile in the fall of 1907 ruled above the gold export point; and it may be well to emphasize the fact that the management of the Reichsbank reached the same conclusion. As we have explained before, it must have been either mistaken patriotism or fear of antagonizing the Reichsbank which for so long a time kept our bankers from exporting gold, and which really created a depreciation, however short lived, of our monetary standard in the international money markets." Article published in the Frankfurter *Zeitung*, during December, 1908; reprinted in *Renewal of Reichsbank Charter*, p. 31. See also Clare, pp. 111 and 116; and Hansard, p. 416.

Chapter, the Reichsbank and the Bank of France discount bills of exchange drawn in foreign currencies and, in fact, both have at one time or another acquired a large portfolio of such bills. Thus on the 30th of December, 1912, the Reichsbank's holdings of foreign bills amounted to £2,004,988,[151] which were drawn on some ten countries to the following amounts:

England	£924,944
Scandinavia	255,502
Switzerland	171,827
Italy	168,987
Holland	129,888
France	127,483
Denmark	110,335
America	62,588
Belgium	45,151
Austria-Hungary	8,283

In the following table there is given the annual average amount of foreign bills the Reichsbank has had in its portfolio from 1876 to 1910, their average life, and the proportion which they bore to the total purchases and discounts of bills of exchange:

PURCHASES OF FOREIGN BILLS OF EXCHANGE[152]

Year	*Average annual amount (marks)*	*In percentage of total bills purchased and discounted*	*Average maturity (days)*
1876	1,672,000	0.4%	34
7	1,873,000	0.5	36
8	5,351,000	1.6	48
9	3,560,000	1.1	33
1880	9,584,000	2.8	60
1	7,481,000	2.2	48
2	5,590,000	1.5	47
3	4,004,000	1.1	31
4	4,631,000	1.2	38
5	7,951,000	2.1	37
6	16,961,000	4.3	58
7	7,864,000	1.8	42
8	3,316,000	0.8	22
9	3,798,000	0.7	22

[151] *Bankers' Magazine* (London), 1913, Vol. XCVI, p. 242.
[152] Source: *Die Reichsbank—1876 bis 1910*, p. 158.

1890	5,420,000	1.0%	30
1	5,306,000	1.0	24
2	4,715,000	.9	25
3	4,113,000	.7	22
4	2,540,000	.5	17
5	2,569,000	.5	17
6	2,753,000	.4	18
7	2,411,000	.4	16
8	4,934,000	.7	22
9	19,045,000	2.3	52
1900	26,753,000	3.3	45
1	26,946,000	3.2	58
2	22,733,000	2.9	45
3	24,068,000	2.8	50
4	22,212,000	2.7	45
5	33,093,000	3.7	52
6	43,244,000	4.4	53
7	44,461,000	4.0	60
8	70,881,000	7.3	53
9	107,239,000	11.7	66
10	140,648,000	14.1	69

The Bank of France, likewise, has, at one time or another, built up a considerable portfolio of foreign bills, of which, according to Professor Liesse, it has made very good use.[153]

Central reserve banks, holding portfolios of foreign bills, are enabled to correct temporarily adverse exchanges, without being forced to raise the Bank rate, and in that way can prevent undue fluctuations in the Bank rate.[154] If mark exchange, for instance, had reached the gold export point, and if the Reichsbank felt that the raising of the discount rate was not necessitated, it would discount its sterling bills in London, and so be in a position to sell sterling drafts in Berlin, or buy mark exchange in London.[155] Either method would have the effect of raising the value of the mark.[156] The efficacy of this method as a corrective of the exchanges depends, of course, upon the

[153] Liesse, p. 231.

[154] See Whitaker, p. 574.

[155] See Landmann, p. 176.

[156] If the Reichsbank had held British securities and sold them in London to obtain funds against which it could sell sterling drafts or with which it could buy marks, the same result would be effected. The holding of securities is not nearly as advantageous as the holding of foreign bills, for at times it is difficult to sell securities excepting at great loss.

size of the revolving fund which a central reserve bank keeps invested in foreign bills. As a substitute for the elevation of the Bank rate this method is the best. Its use does not involve the abandonment of the gold standard or the artificial manipulation of the gold points as do the others, or the hampering of free movements of gold between nations. The foreign bill policy has been successfully employed by nations, such as Austria-Hungary, as a regulator of the exchanges, when the elevation of the Bank rates would have been ineffective in accomplishing the same result.[157]

The Importance of a Stable Rate of Discount. By a judicious use of a portfolio of foreign bills, then, a central reserve bank may at times remedy temporary unfavorable balances of payments without being compelled to raise the Bank rate. In case the foreign bill policy proves ineffective in rectifying the exchanges, or in case economic conditions within or without a nation warrant the raising of the Bank rate, a central reserve bank should not hesitate for a moment to do this. But the Bank rate should not be raised (or lowered) without good and sufficient reasons; unnecessary fluctuations should be avoided. Frequent oscillations introduce an element of uncertainty into the stock and produce markets which make business akin to gambling.[158] A stable rate enables the entrepreneur to judge beforehand his costs, a rate which fluctuates frequently encourages speculation.[159] So great is the importance of a stable rate that Professor Foxwell has declared: "The true test of sound economic, as distinguished from merely solvent banking, is the moderation of the average rate of discount."[160] A similar statement was made by Arthur Fischel, a Berlin banker, before the German Bank Inquiry Commission of 1908: "I am inclined to assume that it would be better for us to have a stable rate of interest, one fluctuating as little as possible, than a very low rate that would be only temporary and would later on expose us to the danger of a corresponding violent rise."[161] If it is possible to rectify the exchanges, to protect the gold stock of a central reserve bank, and to prevent domestic speculation, by measures which in no way jeopardize the monetary standard (such

[157] Lotz, p. 508. See also *Renewal of Reichsbank Charter*, pp. 35–40.

[158] See Andréadès, p. 316; and Lotz, p. 508.

[159] See *Report* from the Select Committee on Bank Acts, 1857, question ‡1440.

[160] *The Economic Journal*, March 1892, p. 154.

[161] *German Bank Inquiry*, p. 76.

as a foreign bill policy), and to do this without "raising the rate—or, at all events, without raising the rate again and again—it is obviously desirable." [162]

Lack of Stability in English Bank Rate. The most noticeable feature about the Bank of England rate is its lack of stability.[163] During the past seventy-eight years it has been changed no less than 6.11 times a year on the average. Its range of fluctuation has been severe, the maximum and minimum rates have differed by as much as 5% during six separate years. That such wide and frequent fluctuations were a hardship for industry and commerce, no one would doubt.[164] Most authorities agree that the provisions of the Peel Act have been mainly responsible for the numerous and wide fluctuations in the English rate. In their zeal to follow in every detail the principles of the Currency School, and to make of the Bank of England note virtually a gold certificate, the framers of the act failed to provide England with an elastic currency.[165] The lack of an elastic currency meant that seasonal and cyclic demands for money could not be satisfied by issuing additional bank notes [166] but fell directly upon the reserve of the banking department.[167] Consequently the absolute amount as well as the percentage of reserve

[162] London *Statist*, May 19, 1900, p. 759.

[163] See Andréadès, p. 315.

[164] See Lotz, p. 505.

[165] "The absence of elasticity in the bank note issue under the Bank Act of 1844 has accentuated every crisis which has since arisen in this country, if indeed it has not helped to produce some. The idea governing the Act was to create a mixed currency of gold and notes, which should move in the same way as if it consisted entirely of gold. . . . Experience has shown the circulation of notes to remain fairly constant, so that any movement of gold into or out of the bank has not affected the circulation, but the reserves." Herman Schmidt, in *The Economic Journal*, 1901, p. 74.

[166] Some economists feel that it was the purpose of the framers of the Act to achieve a certain degree of elasticity in the Bank notes through allowing their issue against securities. As gold poured in, the securities held in the Issue Department should be removed from the custody of that department, and further, when gold was withdrawn, owing either to a foreign or an internal demand, the securities should be brought back. This was never done, as at all times the notes were issued to the full value of the securities. See Palgrave, *Economic Journal*, December 1906, in a review of *The Bank of England*, by W. R. Lawson.

[167] See testimony of John Stuart Mill before the Select Committee on Bank Acts, 1857, questions ♯2026 and 2027. See also Mill, *Principles of Political Economy*, Volume II, p. 238.

against deposits (which increase at these periods) would appreciably decline, and the Bank would be compelled to raise the rate to attract imports of gold and capital. The provision in the Act forcing the Bank to purchase all gold presented to it at 77s. 9d. per ounce standard,[168] the lack of fluidity in its assets,[169] and its small gold holdings [170] have been cited as additional reasons for the frequent fluctuations.

Many are the measures which have been proposed to lessen the variations in the Bank rate. Since the inelasticity of the Bank note is recognized as the chief cause,[171] numerous proposals have been put forward to remedy this defect.[172] Economists and bankers have frequently pointed out that the mainte

[168] "The effect of that clause is certainly far from being advantageous to the equable working of the Reserve, and in consequence of the rate of discount charged by the Bank, it is perhaps rather to be wondered at that this provision of the Act, convenient perhaps in 1844, but hardly adapted, without some modification, to the present requirements of our money market—continually pressing on the Bank, matters have been managed without greater fluctuations even than there have been. One important part of the duty of banking to commerce is to keep the rate for discounts as even as possible, and certainly no legislation could hardly have been devised which renders an even rate more difficult to maintain than that in force in this country at the present time." Palgrave, *The Economic Journal*, December 1906, pp. 579-580. See also *Interviews*, etc., p. 103; *Report* from the Select Committee on Bank Acts of 1857, question #1879.

[169] See Palgrave, *Bank Rate and the Money Market*, p. 199; Andréades, pp. 317–320.

[170] See R. H. Patterson, *On the Rate of Interest*, etc., p. 356; and Plenge, p. 80.

[171] See Conant, *The Principles of Money and Banking*, Volume II, p. 128.

[172] Some of the proposed reforms may be found in the following sources:

1) Speech of H. H. Asquith, Chancellor of the Exchequer, on May 9, 1906 at the annual dinner of the Central Association of Bankers, quoted in the *Bankers' Magazine* (London), July 1906, p. 5.

2) Recommendations of the Associated Chambers of Commerce, published in the *Economic Journal*, June 1909, p. 338.

3) Robert Giffen, *Essays in Finance*, pp. 113–114.

4) Viscount Goschen, *Essays and Addresses on Economic Questions*, pp. 116, 121, and 129.

5) R. H. Inglis Palgrave, a paper read before the Economic Section of the British Association for the Advancement of Science, at York, on August 3, 1906, quoted in the *Bankers' Magazine* (London) for September 1906.

6) Sir Felix Schuster, Our Gold Reserves, *Journal of the Institute of Bankers* (London), June, 1907, pp. 1–22.

7) Withers, *Meaning of Money*, pp. 282 and 297.

nance of larger gold reserves and of a portfolio of foreign bills would go a long ways towards stabilizing the Bank rate.[173] That the general results of the latter "would be beneficial . . . may well be believed, but to imagine the Bank of England a large holder of foreign bills as the Reichsbank and the Banks of Belgium and Holland are, appears as unlikely as to think of their altering their bookkeeping to a decimal system of notation." [174]

The Bank of England Aided by Other Reserve Banks. At three times in its history, during very severe crises, when the Bank of England found that the elevation of its discount rate was not enough to correct the exchanges, it resorted to still another expedient to import gold and capital in sufficient amounts. The Bank was forced to borrow funds abroad. Its borrowings from the Bank of France and from bankers in Hamburg, which saved it from bankruptcy in 1839, have been noted. Again during the Baring difficulties of 1890 "the directors of the Bank obtained £3,000,000 in gold from the Bank of France and

8) The Cunliffe Committee recommended (*First Interim Report*, 1918, p. 11) that the permission given the Bank of England by Section 3 of the Currency and Bank Notes Act, 1914, under which the Bank of England may with the consent of the Treasury temporarily issue notes in excess of the legal limits, be continued.

[173] *The Bankers' Magazine* (London) points out editorially the importance of holding a portfolio of foreign bills: "We notice that between the returns of August 23 and August 31, 1903, the Imperial Bank of Germany parted with more than 2 millions in specie [in £]. It was able to do this without raising the rate. And now a demand for about half that amount has caused the Bank of England to raise its rate. There is, of course, one important difference between what happened at these two banks—the demand at Berlin was probably for domestic requirements, that at the Bank of England was mainly for foreign requirements. But it would have been a satisfactory thing if the Bank of England had been able to part with this sum without raising its rate. The Bank of Germany probably holds at the present time a large stock of foreign bills which are an assistance to it in case the exchange is unfavorable. If the Bank of England had been equally strong in this respect it would have been able to meet the demand for specie for export in a similar manner." October 1903, p. 443. Similarly Mayne writes (p. 70), "Auch die Thatsache dass die Bank von England ein Portefeuille auswärtiger Wechsel überhaupt nicht hält, setzt dieses Institut in bezug auf Goldbezüge gegenüber der Bank von Frankreich und besonders der deutschen Reichsbank in Nachteil."

[174] Palgrave, in *The Economic Journal* (London), December 1906, p. 580.

£1,500,000 from Russia." [175] Both were quite willing to extend loans to the Bank in order to avert a crisis in England, which would of necessity, have reacted on their own markets.[176] Later during 1906 and 1907, when the American crisis so adversely affected the London money market, the Bank of France came to its rescue by discounting sterling bills, "and so made it possible for the London market to procure the capital necessary to alleviate its current crisis. This is, in fact, a proceeding which is much more economic, in the high sense of the word, than the rather archaic one practiced formerly of making discreet loans of gold to the Bank of England." [177] The importation of capital by a central reserve bank through borrowings abroad can be successfully employed only if the crisis is fairly localized, and if there is some country, unaffected by the crisis, which is willing and able to extend funds.[178]

SPECULATION AND THE BANK RATE

The state of the foreign exchanges, and the percentage of the reserves of a central reserve bank are perhaps the chief, but should not be the sole determinants of the Bank rate. More and more it is being recognized that one of the most valuable services a central reserve bank can perform is in the reduction of the amplitude of business cycles. That business activity proceeds in rhythms, with recurring periods of prosperity, crisis, decline, and depression is generally admitted, that the amplitude of the cycles, whatever may be their fundamental cause, may at times be reduced by a wise credit and discount policy on the part of a central reserve bank can scarcely be denied.

[175] Goschen, *Essays*, etc., pp. 108 and 109.

[176] See *Ibid.*, p. 109; and *Interviews*, etc., p. 276.

[177] Liesse, p. 230.

[178] Other methods, suggested by various writers, to be employed by central reserve banks either to protect or increase their reserves are: the paying out of notes of smaller denominations (Landmann, p. 137); the closer scrutiny of the paper presented for discount (Landmann, p. 137); the discounting of bills of shorter duration (Lotz, p. 502; and *Report* from the Select Committee on the Bank Act of 1857, questions ‡1481, 1261 and 2570); the refusing to discount accommodation paper (Lotz, p. 502); the increasing of the capital of the bank (*German Bank Inquiry*, pp. 58 and 72, and Mayne, p. 110); the sale of securities (Mayne, p. 110); the payment of interest on deposits (Mayne, p. 112); the acceptance of deposits in foreign nations (*German Bank Inquiry* pp. 353, 554, 877, 927, and 1001).

The Business Cycle. The upward swing of a business cycle is characterized by rising prices, increased industrial activity, a feeling of optimism, an increased demand for labor, greater activity on the stock exchange, expanding loans and declining bank reserves. Entrepreneurs desire to extend their operations, speculators to hold goods for higher prices, importers to increase their imports, and investors to expand their operations. Finally, whether by reason of a consumers' strike, credit contractions, or increased costs of doing business, a crisis is precipitated and a period of business depression is ushered in, characterized by falling prices, a liquidation of securities and commodities, and unemployment. Should the banking system of a nation prove so defective as to be incapable of meeting the exigencies of the situation, the crisis may degenerate into a panic as was true in 1907 in America. Not only may central reserve banks prevent this from occurring, but may, as well, render invaluable service to a nation through reducing the amplitude of the cyclic fluctuations, reducing the heights of prosperity and consequently the depths of the subsequent periods of depression. In an account of its discount policy from 1895 to 1900, a period marked by great business activity, the Reichsbank stated that "there arose for the Bank the task of counteracting the danger of excess connected with each favorable turn of economic conditions; and in this it was just as important to prevent as far as possible too great expansions of production as well as over-speculation and an over-straining of credit. The expansion of production, the price of commodities, and industrial securities, and the demand for credit had to be kept within reasonable limits if the brilliant development of economic forces was not to end in fatal collapse, as often happened in slighter upward movements." [179]

The power of a central reserve bank to smooth out business cycles, depends on its ability to stabilize the general level of prices in so far as this is possible. It is not within the province of a reserve bank to prevent rises in the price level due to an increased production of gold, but it may be very well within its power to reduce such price fluctuations as are generated by credit expansions and contractions. Many regard the price cycle as the best single indicator and barometer of business conditions. A crisis has frequently been described as a stoppage of prices.

[179] *The Reichsbank 1876 to 1900*, pp. 271 and 272.

Rising prices may be thought of as provocative of increased business activity, a period of the full employment of the capital equipment and labor of a nation. A period of falling prices is invariably a period of unemployment and decreased production. After a careful analysis of the various theories offered in explanation of business cycles, Prof. J. H. Williams concludes that "price movements are significant, and in the minds of most writers the chief characteristic of the business cycle." [180] To the extent, then, that the rhythmic fluctuations in business may be due to changes in the general level of prices and to the extent that fluctuations in prices are caused not by an increased production of gold, but by an increasing volume of credit, a central reserve bank may very well be in a position to modify to that extent the amplitude of cyclic fluctuations. It must not be thought that price cycles are wholly injurious to the body economic. In the very first stages of the upward movement an increase in prices may have a beneficial effect in increasing production and in causing the introduction of more efficient methods of production. But when the increase in prices results simply in profiteering, speculation, the hoarding of goods, etc., the time has come for a central reserve bank to put on the brakes and through imposing various credit restrictions to halt the upward movement of the price level. To the extent that a reserve bank is successful in accomplishing this, the amplitude of the cycle is reduced.

Relationship of Price Cycles and the Bank Rate. In Chart VII the close relationship between price cycles and fluctuations in the English Bank rate is shown. This closeness of relationship is not due to the fact that the Bank of England in the past has at all times, consciously endeavored to reduce the amplitude of cyclic fluctuations; but rather because it was forced, by the economic factors which attend an upward swing—increasing liabilities and declining reserves—to raise its rate (sometimes very reluctantly) to protect its own interests.[181]

Let us assume that a reserve bank, through a careful study of the demands for credit, production indices, the trend of security

[180] Williams, *The Rôle of Prices in the Business Cycle*, p. 210.

[181] Sources:

Data obtained from Statistical Department, Federal Reserve Bank of New York.

and commodity prices, and the reserves maintained by the general bankers, feels that speculative forces are at work which need to be curbed in order that the economic development of the country may continue sound. The remedies to be applied to the situation will depend of course upon the causes of the speculative fever. If the upward swing has been stimulated by rising prices which in themselves were caused by an expanding volume of credit produced by too low a bank rate, ruling perhaps below the market rate, the elevation of the Bank rate to a point which

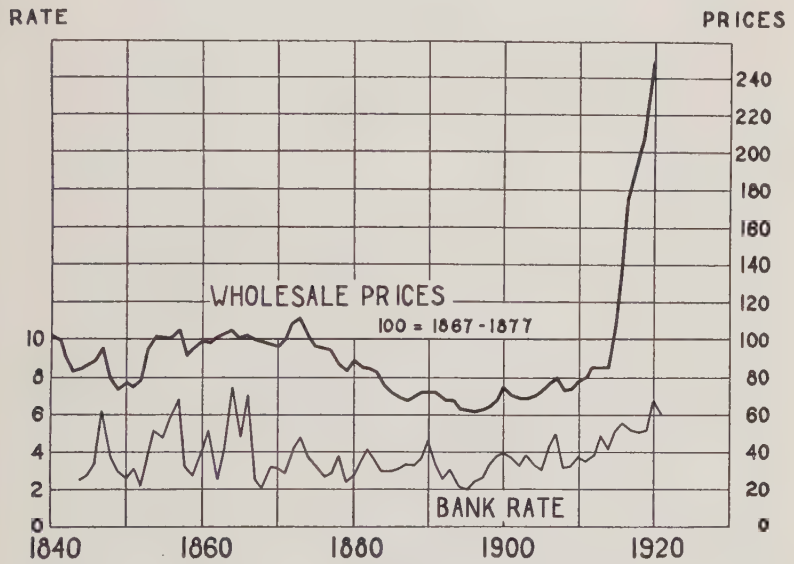


Chart VII: Fluctuations in the Bank Rate and Wholesale Prices in England.

would no longer make it profitable for the market to be in the Bank and to a point which would check the unhealthy business expansion, would of course be the very first corrective. It is a principle of first importance in central reserve banking and one religiously followed by central bankers in Europe that the Bank rate should rule above the market rates of interest on similar types of commercial paper.

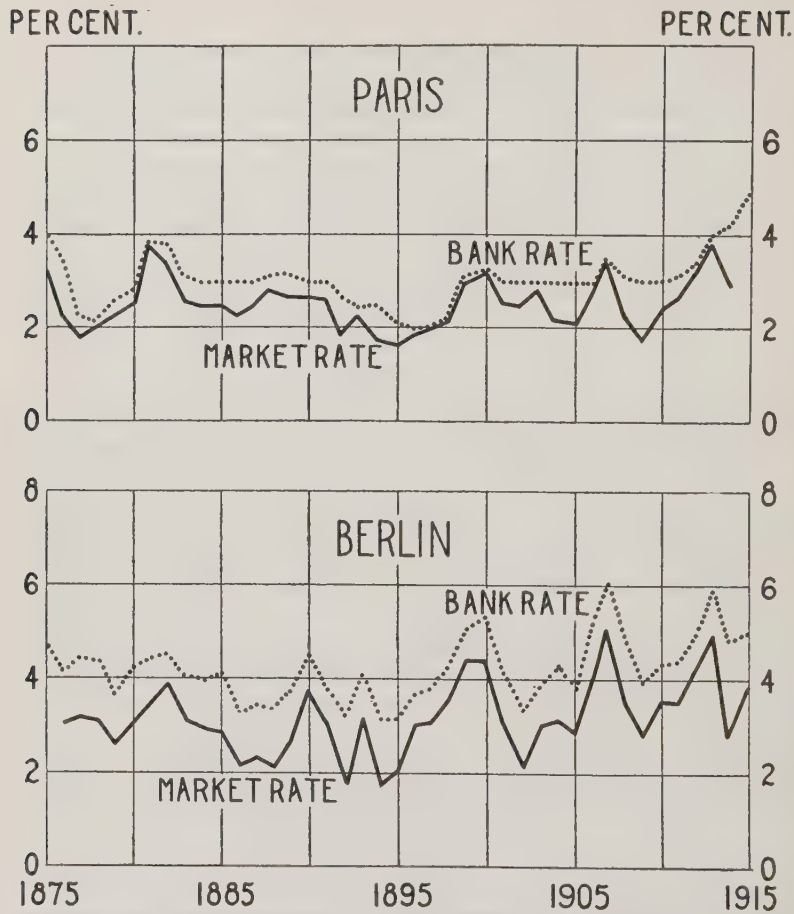


CHART VIII: FLUCTUATIONS IN BANK RATES AND IN MARKET RATES IN PARIS AND BERLIN.[182]

[182] Sources:

Bank rate: Sources are given on p. 39.
Market rates:

Paris
- 1875–1888—Commercial History and Review, *Economist* (London)
- 1889–1890—*Journal of the Royal Statistical Society.*
- 1891–1896—*Handwörterbuch der Staatswissenschaften*, Vol. 3, p. 506.
- 1897–1914—*Statistisches Jahrbuch für das Deutsche Reich.*

Berlin
- 1876–1888—*Die Reichsbank 1876 bis 1910*, p. 209.
- 1888–1915—*Statistisches Jahrbuch für das Deusches Reich.*

This maxim can not be reiterated too often or emphasized too much. During the upward sweep of the cycle, when business confidence runs high and business men optimistically anticipate larger and larger profits, a Bank rate ruling below market rates of interest would induce bankers and individuals to discount their holdings of eligible paper at the central reserve bank and to borrow funds on acceptable securities. As the volume of bank credit, either in the form of bank notes or deposits increased, prices would rise, unless the fresh supplies of purchasing power media had been paralleled by increases in the production of goods. The production of goods, over short periods,[183] can not be increased indefinitely—limits are set by the supply of raw materials, the amount of capital equipment, and the available labor. There are few such automatic or mechanical checks set on the amount of purchasing power media which may be issued. It is true that expansions in money and deposit currency, by causing prices to rise sufficiently high, may begin to drive gold abroad. The exportation of gold, depleting the reserves of the central reserve bank, would of course force it to raise its discount rate and take other steps calculated to stop the inflationary movement and check the efflux of gold. Should a nation have abandoned the gold standard, however, even this check is removed. Inflation could then proceed merrily on until the very worthlessness of the currency and the complete demoralization of the exchanges forced the nation in question to a thorough currency reformation. As automatic checks to inflation are few the directors of central reserve banks themselves should, early in the upward movement, courageously and unhesitatingly raise the Bank rate and adopt other measures calculated to check the inflationary tendency. The time to check the rise in the prices is at the time when increases in the volume of credit fail to call forth any compensating increase in production. Desirous of remaining in positions of responsibility, sensitive to criticism and too often lacking an adequate training in monetary and banking theories, it may be too much to expect of central bankers that they should resist popular clamors for soft money and inaugurate deflationary policies. Central banks in Europe have been quite successful, on the whole, in keeping the Bank rate above the market rate, despite the political pressure which the proponents of soft monetary ideas can always muster. Further, during the upward swing of the cycle, a

[183] See Marshall, *Principles of Economics*, Book V, Chapter V.

central reserve bank should scrutinize the paper presented to it most carefully, assuring itself so far as is possible that the paper arose from actual commercial transactions.[184] The rates on Lombard loans should be raised far above the Bank rate, for funds obtained from a reserve bank on collateral are more likely to be used for speculation than are the funds obtained from discounting commercial paper.[185]

Correctives of Speculation. Should other factors, such as increasing imports of gold, have been the stimulants of the low market interest rates and of the expansion of credit, a reserve bank should make every attempt to stiffen the market rates of interest and, if possible, to raise them to the level of the Bank rate, through mopping up the surplus funds in the market. If such action is ineffective, if the general banks have sufficient funds of their own and are not forced to rediscount with the central bank, there is little else for a reserve bank to do but to issue warnings to the community and to the banks of the country of the unsound nature of the business expansion.[186] Its warnings though will probably be as obnoxious to the business world and as unheeded as those of Cassandra. Should business men follow the warnings and advice of a central reserve bank, they can, to a considerable extent, reduce the amplitude in cyclic fluctuations, themselves, even when the central reserve bank may be helpless to accomplish the same thing. Reductions by business men in inventories, cuts in prices, quicker collections, a shortening of the terms of sale, the extending of credit less liberally will tend to hasten the decline in prices and reduce the amplitude of the cycle. It would reveal a very enlightened self-interest on the part of the business community if they would follow the policy outlined above, even though on the upward sweep their profits might be reduced somewhat, nevertheless it would mean reduced losses on the downward swing.

The Crisis. Should a reserve bank, then, be unable to check the prosperity boom, should the general banker be possessed of

[184] See Mayne, p. 29.

[185] "Reeles Geschäft und Spekulation ist in Kritischen Zeiten schwer zu trennen, eine Grenze kaum zu finden, und eine Zurückdämmung und Einschränkung der letzteren ist absolut notwendig; lange zu prüfen, welches Darlehen fur reelle, welches für Spekulationszwecke verlangt wird, ist weder die Zeit noch überhaupt die Möglichkeit bei einer allegemeinen Kreditlosigkeit und doch Kreditbedürftigkeit vorhanden." Mayne, pp. 29 and 30.

[186] See Dunbar, pp. 97–98.

sufficient funds [187] of his own to meet the demands of the business man for credit, it must husband and increase its resources, and bide its time until its services will be required at the time of the crisis whenever that may be. The general banks can not continue to expand indefinitely. Sooner or later, a point will be reached when their reserves (in the form of deposit accounts with the reserve bank) are too small to support the growing deposit liabilities and will have to be increased. This they may do by rediscounting directly or indirectly a part of their portfolio with the reserve bank at the *Bank rate*. When the general banks are forced to appeal to the reserve banks for funds, the Bank rate is said to be effective, and the market rates begin to tighten. The marginal producers, those who are unable to produce profitably at the higher rates of interest, or who are unable to renew their loans for the former amounts, must either dispose of their products if they wish to meet their obligations or must fail.[188] Prices begin to start on their downward course. The larger producers are now less concerned with production and pushing their sales, than in maintaining their solvency and providing for their outstanding liabilities.[189] To meet their liabilities they are forced to borrow heavily at their banks. "The failure (or prospect of failure) of firms that have borrowed heavily from banks induces fear on the part of many depositors that the banks will not be able to realize on these loans. Hence the banks fall under suspicion, and for this reason depositors demand cash." [190] The general bankers then must increase their loans to their solvent, but temporarily embarrassed customers, at the very time that some of their depositors are withdrawing cash. The refusal of a note-issuing central reserve bank *to extend credit freely at this time* either in the form of notes or deposits, to the joint stock banks and in fact to the general public would cause the crisis to degenerate into a panic,—leading to a suspension of specie payments, a hoarding of money, a premium on currency and to the use of unlawful substitutes for cash. In his testimony before the Select Committee on Banks of Issue on July 22, 1875, Walter Bagehot indicated the proper course a bank should follow during a crisis: [191]

187 See Dunbar, p. 98.

188 Fisher, *The Purchasing Power of Money*, p. 65.

189 See Mitchell, *Business Cycles*, pp. 571–579.

190 Fisher, *The Purchasing Power of Money*, p. 65.

191 *Report* from the Select Committee on Bank of Issue, 1875, questions ‡8170, 8171 and 8172.

Q. I think I gathered from the general tenor of your evidence with reference to panics, that you thought that the proper course for the Bank of England to adopt in times of difficulty was to raise the rate of interest betimes to such an extent as to attract money from abroad, but not suddenly refuse the discount of good bills?

A. I think that the Bank of England ought to extend its discounts at the time of a panic as holding the ultimate reserve of the country; that whoever holds the ultimate reserve, whether it is in many banks or in one, must be prepared in times of extremity to lend freely. This is the only mode by which a panic can be allayed. Any restriction of accommodation at that moment only increases the panic and augments the amount of loans in advance which have to be given afterwards.

Q. But you would agree, would you not, that in times of difficulty it is necessary, while exercising every possible liberality in the way of discounts, to raise the rate to such an amount as would attract money from abroad?

A. Quite so. I think the higher the rate in reason at which the accommodation is given the better.

Q. You would raise the rate, but you would not refuse the accommodation?

A. I would raise the rate, but I would not refuse the accommodation.

In summarizing the observations of this section, it must be remembered that a central reserve bank is not omnipotent—that it can not invariably and at will produce periods of prosperity and bring on depressions. The forces controlling cyclic fluctuations are so complex, interrelated and world-wide in their scope that it would be most superficial to feel that the central bank of a nation could by itself direct and control these forces.

SEASONAL DRAINS AND THE BANK RATE

The importance of maintaining a high Bank rate during a cyclic drain has been indicated. Should a reserve bank follow the same policy during a seasonal drain? As far back as 1858 and 1859, the London *Economist* directed the attention of its

". . . the policy of liberal loans though at high rates and the payment of money or notes to all who for any reason whatever may demand cash are now everywhere recognized as the guiding principles of action in emergencies." Dunbar, p. 100.

readers to the seasonal fluctuations in the reserves, note issues and discount rates of the Bank of England,[192] though no attempt was made at that time to assign reasons for these periodic variations or to analyze them statistically. In a masterly essay, read before the Statistical Society of London on April 17, 1866, Jevons showed that the Bank's reserves were subjected to the greatest drain or pressure during the autumn,[193] particularly during the month of October, and presented detailed tables of the average weekly variations of the reserves, circulation and deposits of the Bank for the period from 1845 to 1861[194] to substantiate his contention. Jevons attributed the autumnal pressure to the "absorption of money in buying up the product of the harvest," the general quarterly payment of rents, bills and especially the payment of dividends.[195] Mr. Palgrave extended and elaborated upon the studies of Jevons. In his testimony before the Parliamentary Committee of 1875, he presented very elaborate and detailed tables[196] of the seasonal variations in the Bank and market rates of interest, in the circulation of Bank notes in England, and in the liabilities and reserves of the Bank of England. His results are summarized in the charts on the following page.

The seasonal variations (with such cyclical and secular tendencies as exist removed) in the Bank and market rates of discount, the reserves and notes of the Bank for the years preceding the Great War are represented in the graph on page 91.[197]

In analyzing the charts, it will be noted how closely (in spite of the difference in method of computation) the seasonal variations within recent years correspond to those during the middle

[192] See Giffen, p. 58, and Jevons, pp. 162 and 164. See also *Report* from the Select Committee on Bank Acts (1857). Appendix, p. 2, remarks of T. M. Weguelin, Governor of the Bank of England.

[193] See Jevons, pp. 160–163.

[194] *Ibid.*, p. 183.

[195] *Ibid.*, p. 172.

[196] *Report* from the Select Committee on Banks of Issue, 1875, pp. 506, 525, 527 and 529.

[197] Sources:

Bank and Market Rates,
1899–1913—*Financial Review.*
Bank notes,
1899–1901—London *Economist.*
1902–1913—*Financial Review.*
Reserves,
1899–1913—London *Economist.*

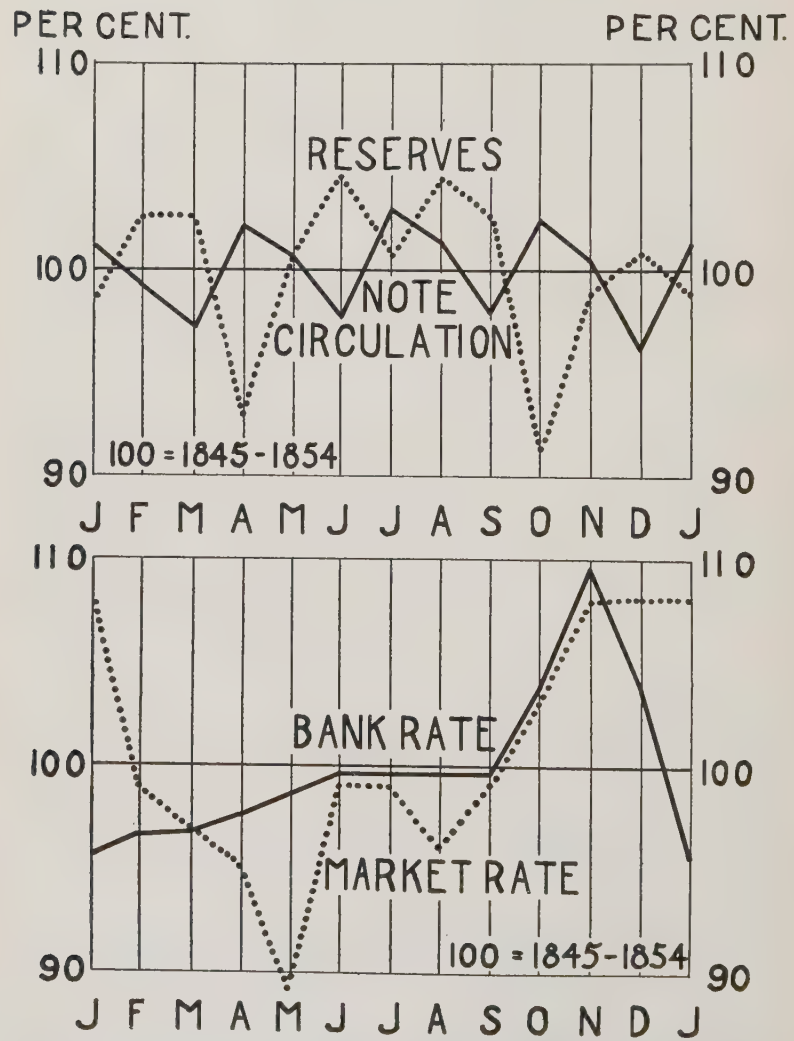


Chart IX: Seasonal Variations in the Reserves, Note Circulation, Bank and Market Rates in England, 1845–1854.

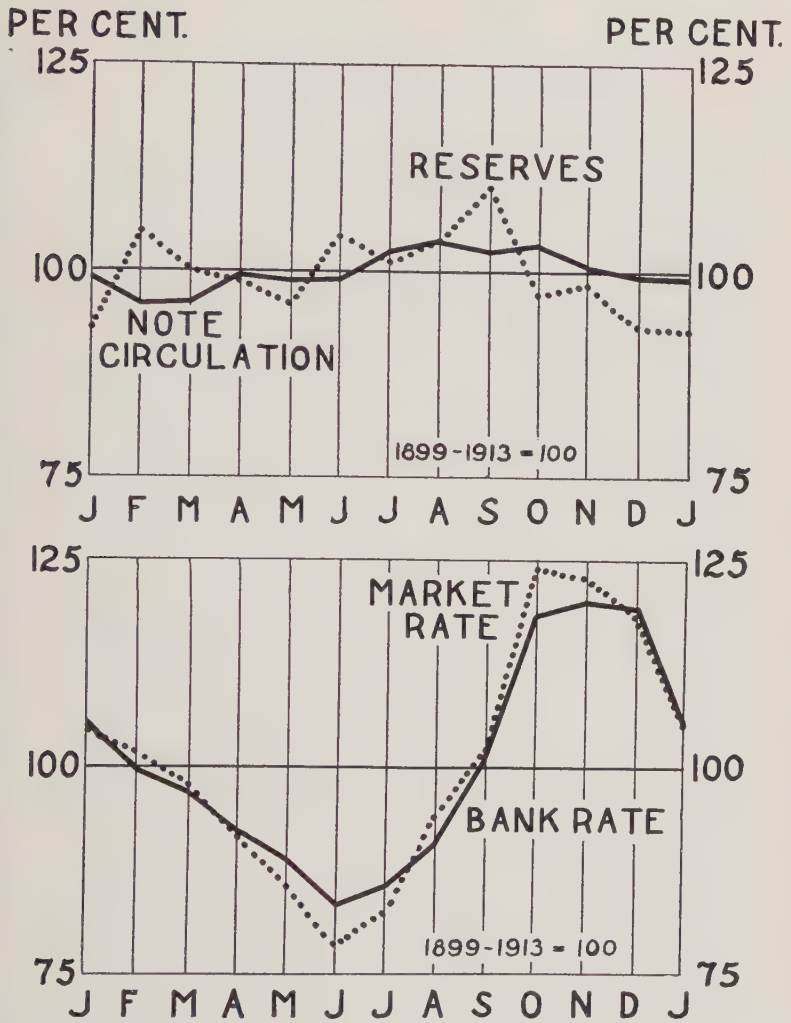


CHART X: SEASONAL VARIATIONS IN THE RESERVES, NOTE CIRCULATION, MARKET AND BANK RATES IN ENGLAND, 1899–1913.

of the past century. During January the reserve reaches its lowest point,[198] the circulation is apt to be at a maximum either during August or October, and the discount rate a maximum during either November or December.[199] The periodic increase in the Scotch note circulation,[200] the increased business activity of the Fall months, the demands of the domestic harvest, the payment of dividends, the imports of cotton and the grains from America largely account for the Autumnal pressure.[201] The slight pressure which the Bank is subjected to in April may be accounted for by the increase in the Scotch note circulation which regularly takes place then, the demands of the agriculturalists, and the "opening up of those sources of importation which have been locked up by the severity of the winter." [202]

Seasonal Variations in Germany and France. The seasonal variations in the notes issued by the Reichsbank are of course (by reason of their greater elasticity) much more accentuated than in the case of the notes of the Bank of England. The notes of the Reichsbank exhibit four upward movements during the year.[203] After the needs of the Christmas trade and the first of the year settlements have been satisfied, they contract rapidly reaching the lowest point of the year during the first part of March.

[198] See Palgrave, *Bank Rate and the Money Market*, p. 83.

[199] The practice has seemed to be to raise the Bank rate after the reserve has fallen and not before, so that November which follows a month with a low reserve has the highest rate of discount. See Giffen, p. 65.

[200] See Palgrave, *Bank Rate and the Money Market*, p. 107.

[201] See A. H. Gibson, *Bank Rate—the Bankers' Vade Mecum*, p. 19.

[202] Palgrave, *Bank Rate and the Money Market*, p. 107.

[203] See Landmann, pp. 127–130.

Sources:

Note circulation—The London *Economist.*

Bank and market rates,

1899–1903—Statistiches Jahrbuch für das Deutsche Reich, 1904, pp. 183, 188.

1904–1905—Statistiches Jahrbuch für das Deutsche Reich, 1906, p. 220.

1906–1908—Statistiches Jahrbuch für das Deutsche Reich, 1909, p. 264.

1909–1911—Statistiches Jahrbuch für das Deutsche Reich, 1912, p. 284.

1912–1913—Statistiches Jahrbuch für das Deutsche Reich, 1916, p. 55 and *The Financial Review.*

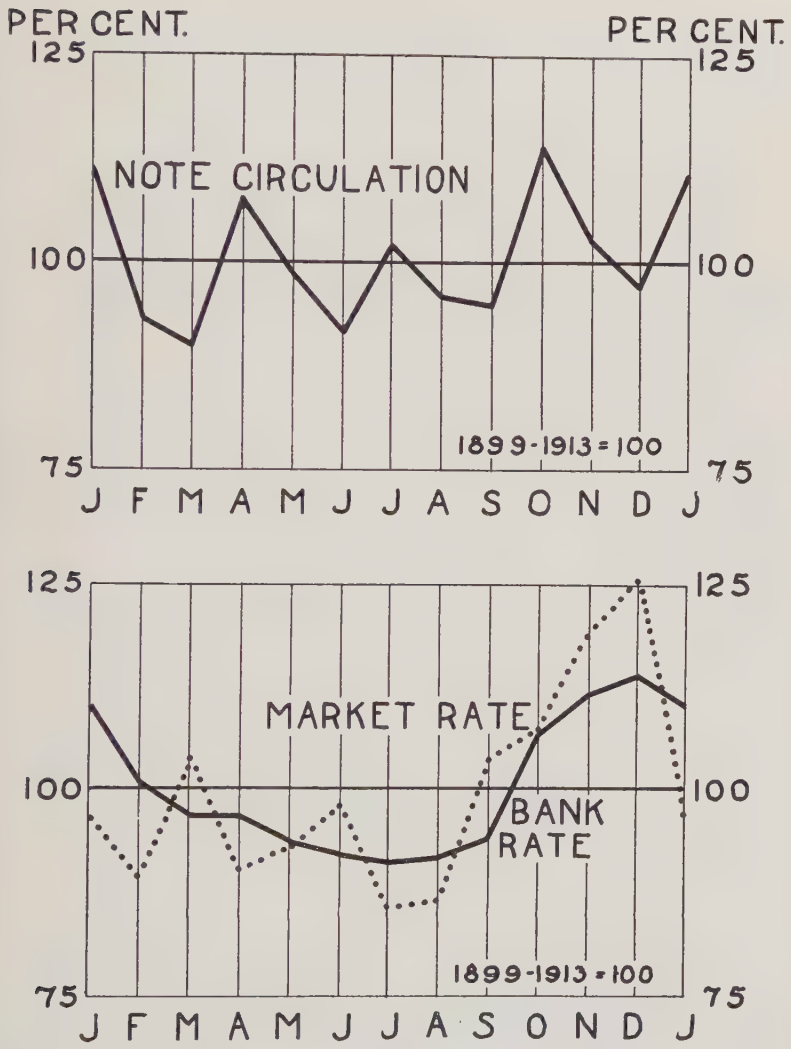


CHART XI: SEASONAL VARIATIONS IN THE NOTE CIRCULATION, MARKET AND BANK RATES IN GERMANY, 1899–1913.

By reason of the Spring agricultural needs, the demand for funds for dividend payments and for use in business, which is undergoing a revival after the dull months of February and March, the notes increase for the first time during the latter part of March and the first part of April. During May and June the notes contract, but expand for the second time to meet the dividend payments falling due July 1. The agricultural demands of the harvest season cause the notes to expand a third time during September, reaching the highest point of the year in October. The notes subsequently contract and expand a fourth time to meet the requirements of the holiday trade. The Bank rate stiffens up considerably in the Fall—in fact, it is quite customary for the Bank rate to be raised in October, and lowered again in February.

The seasonal variations in the notes issued by the Bank of France are quite similar to (as the same underlying forces are operative), but much less pronounced than the periodic fluctuations in the German circulation. The French Bank rate exhibits only a very slight tendency toward seasonal movements.[204] The market rate is much more flexible, following more closely the demands for money and capital as it rises and falls.

Discount Policy During Seasonal Drains. What should the discount policy of central reserve banks be during seasonal demands for money? Should the Bank rate be raised as the reserve percentage declines? Assuming that the demand for funds is purely seasonal in its nature, and one which can be met by an increase in the quantity of Bank notes or deposits, the elevation of the Bank rate seems both unnecessary and unwise.[205] Unnecessary, for once the seasonal needs have been met, the notes

[204] Sources:
Bank and market rates,
1899–1901—The London *Economist.*
1902–1913—*The Financial Review.*
Note circulation—The London *Economist.*

[205] In speaking of the fact that the yearly maximum and minimum circulation of the Reichsbank differ at times by as much as £10,000,000, Mr. Weill (p. 355) states, "This enormous demand may be satisfied without resorting to any measure of restriction, for the amount of circulation issued for such purposes customarily flows back to the central institution within a comparatively short time." See also Landmann, p. 136. The Reichsbank ordinarily raises its rate during the Fall, but this is not done with the purpose of restricting the seasonal demand but with the object of checking the foreign drain which occurs then.

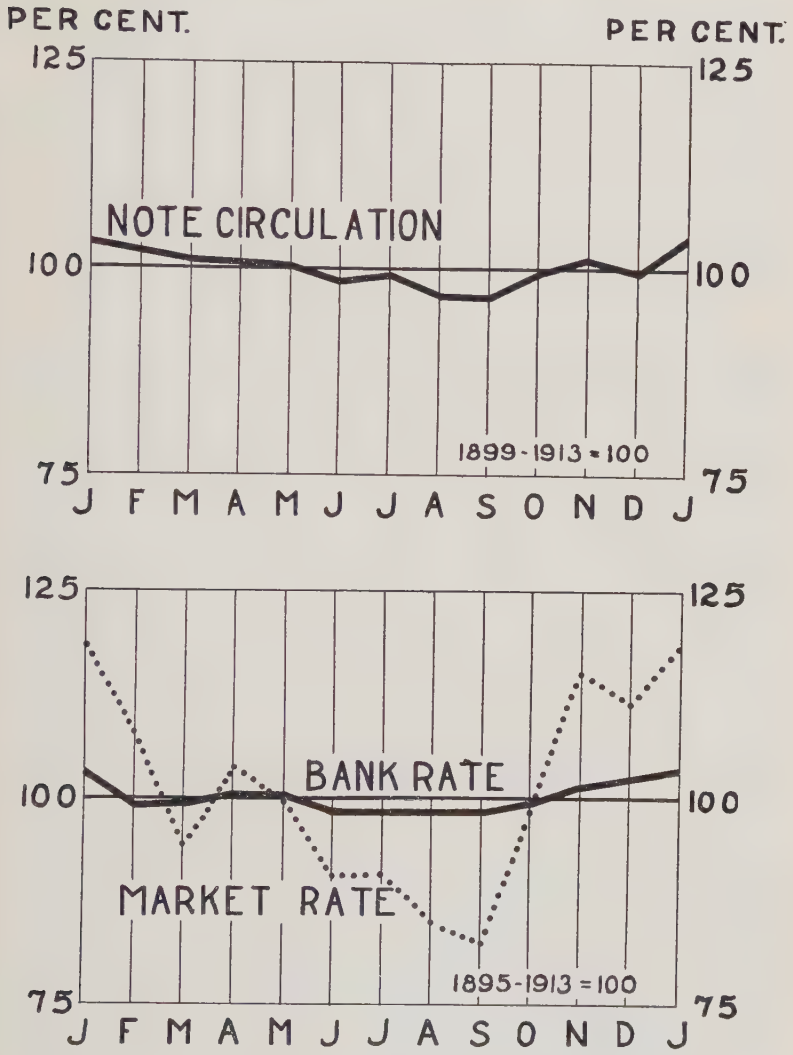


Chart XII: Seasonal Variations in the Note Circulation, and in the Bank and Market Rates in France.

will contract and the reserve percentage should automatically rise to its former level. Unwise, for the elevation of the Bank rate increases producers' costs, particularly those of the agricultural classes, and wipes out the profits of marginal entrepreneurs. A reserve bank, however, often has to meet a heavy foreign drain of specie or has to check domestic speculation at the same time that it is being pressed for accommodation to satisfy seasonal needs. The bank may feel warranted in raising its rate under such circumstances, but the elevation of the Bank rate should be the result not of the seasonal pressure, but of the foreign drain or of the domestic speculative tendencies, which happen to occur at the time of a seasonal drain.

CONCLUSIONS

The value of any historical study lies in the light it can shed on the problems confronting modern society, in indicating the course present generations should follow and in warning us of the mistakes of the past. For society to err once through ignorance is no crime; the human race advances through trial and error; but it is wrong for society or for the leaders of society to repeat the same mistake and so bring suffering to the many. The Federal Reserve System, a mere infant as measured in years among the central reserve banks of the world, may learn much from the experience of European central banks. The principles which they discovered to be fallacious and the doctrines which they found to be erroneous can be avoided. We are the heirs of a vast stock of knowledge, open to all who will but come and read, and which should be applied in the solution of our own problems. The majority of the problems confronting the Federal Reserve Banks are not new—the European banks have met with them time and time again. In dealing with these problems the European central banks at times erred but later as their knowledge of the administration of the Bank rate grew they were more successful. The Federal Reserve Banks should profit by these experiences, should avoid the same errors, should follow the principles proved by long years of application to be sound. Some of the more important lessons to be learned from the experiences of the European central reserve banks are the following:

1) That laws limiting the legal rate of interest a central reserve bank may charge, destroy its efficiency as the protector of the gold

stock of a nation and as the regulator of the foreign exchanges and have invariably had to be repealed.

2) That while the percentage of reserves at a central bank may be the chief factor causing changes in the Bank rate, it should not be the sole determinant. Other factors such as domestic inflationary and speculative tendencies, the foreign exchanges, economic and political conditions in other countries should receive equal consideration.

3) That the Bank rate should rule above the market rates of interest on similar types of commercial paper is a principle of cardinal importance.

4) That the commercial paper a central reserve bank is called upon to discount should be short-time, self-liquidating paper and represent a bona-fide commercial transaction.

5) That discriminatory rates of interest, higher than the Bank rate, should be imposed on advances made on bonds and stocks as collateral, advances which only too often are used for fixed capital or speculative purposes.

6) That the Bank rate cannot be effective unless the credit of the nation and of the central bank be sound, unless there exists a well developed discount market, which will not develop unless the nation in question has achieved importance as a short-term international creditor, and unless a rise in the Bank rate is followed by rises in the market rates of interest.

7) That a central bank should be possessed of a portfolio of the best bills of exchange or of a relatively small amount of the most desirable forms of short-term government indebtedness to use, as the occasion may warrant, in mopping up the surplus funds from the market when it becomes necessary to do this in order to control the market rates of interest.

8) That it is inadvisable for the Bank rate to be the same in every section of a large country, with varied and diversified resources, that in some sections the Bank rate should rule at a higher figure than in others. This fact has led some of the European banks to adopt a private rate of discount, which has been abandoned in a few cases by reason of political pressure.

9) That such expedients for preventing foreign drains and for encouraging imports of gold as the gold premium policies, interest-free advances on imports, the redemption of notes in light weight coins or solely at the head office of the central bank, or the use of "moral" pressure, or in short the putting of any impediments in

the way of the free operation of the gold standard are unwise and unsound.

10) That the acquisition of a portfolio of foreign bills drawn on gold standard nations is the only method for the rectification of the exchanges, aside from credit contractions, which should be employed by a central reserve bank.

11) That a stable rate of discount is of the greatest value and importance to a nation, and that the official rate of discount should not be raised or lowered needlessly but only when economic conditions dictate it.

12) That a central reserve bank should do all it can to reduce the amplitude in business cycles—that the Bank rate should be raised, no matter at what figure the reserve stands, when the expanding volume of credit fails to call forth a compensating increase in production, and when speculation and inflation begin to take place.

13) That a central reserve bank should discount liberally but at a high rate during a crisis itself.

14) That the raising of the discount rate during purely seasonal drains is unwise and unnecessary.

15) That the administration of the discount policy and of every phase of the activity of central reserve banks should be in the hands of trained experts uninfluenced by the demands of any one class or party in the nation—that the directors should always outline their policies with but one thought—the common good of all—in mind.

CHAPTER III

THE ORIGINS OF CREDIT CONTROL IN THE UNITED STATES

The Idea of Credit Control Non-Existent in America. Prior to the passage of the Federal Reserve Act the concept of the Bank rate as an instrument of credit control did not exist in America, though European central bankers were aware of its use as early as the crisis of 1857. On this side of the Atlantic, however, the principles governing the inter-relations of the Bank rate, credit expansion, prices, the foreign exchanges, gold movements, and cyclic fluctuations were unknown to the great majority of the banking community. The acts chartering the First and Second Banks of the United States, by limiting the rate of interest which might be charged on loans and discounts to 6% per annum,[1] immediately crippled the Bank rate as an instrument of credit control, even had the directors of these institutions been fully aware of its power.

The Diffused Character of the American Banking System Prevented any Pretense at Credit Control. From the dissolution of the Second Bank in 1836 to the passage of the National Banking Act in 1863, banks were chartered entirely by state law. All, subject to certain limitations, possessed the right of issuing notes. Such reserves as they maintained against note and deposit liabilities were kept either in the form of cash in their own vaults or as a deposit account with banks in important centers. Some of these banks confined their business to one locality; others, with branches, operated throughout an entire state. United or concerted action among them, regarding the amount of credit to be extended or the industries to be favored,

[1] See Dewey, *The Second United States Bank*, p. 167. As a result of charging the same rate of interest in all parts of the country, the applications for accommodation in the less developed sections were quite heavy—in sections where 6% was relatively a low rate of interest.

For a very comprehensive treatment of the history of banking reform in the United States, see Willis, *The Federal Reserve System*, Books I and II.

regarding the control of the foreign exchanges or the prevention of domestic inflation was an unheard of thing. Credit was freely extended during periods of prosperity, cyclic fluctuations were greatly exaggerated. At the time of the crisis, it was quite the customary thing to suspend specie payments.

The National Banking Act recognized the diffused character of the American banking system and continued it. The act was passed originally by Congress on February 25, 1863, but in accordance with the recommendations of Mr. Hugh McCulloch, the first Comptroller of the Currency, it was completely revised and passed again on June 3, 1864. By 1913, 7431 of the 22,958 independent and presumably competitive banks, which constituted the American banking system, existed by virtue of national charter. Their deposits amounted to 84% of the combined deposits of state banks and trust companies. They were the largest single set of institutions under one jurisdiction. They were "the heart and core of the financial system of the country." [2] Though all but one [3] carried the word "National" in its title, they were national only in name. Branches, except under certain circumstances, were forbidden, and each served a single locality. The national banking system was not a system of banking in the sense that the 7431 members coöperated with and aided one another. Such coöperation as did exist among them resulted solely from clearing house memberships or from correspondent relations and not from national incorporation. Despite its improvement over the preceding state banking systems, it was a dismal failure and was stigmatized by Andrew Carnegie before the Economic Club of New York, on February 25, 1908, as the "worst banking system in the civilized world." [4] The diffused character of the National Banking System, the lack of any but local coöperation among the members, and the scattered nature of the reserves prevented any pretense at credit control.[5]

[2] Laughlin, *Banking Reform*, p. 10.

[3] The Bank of North America, in Philadelphia, Pa.

[4] For good statements of the defects in the national banking system see the Aldrich Report, *Congressional Record*, Vol. 48. p. 744; Kemmerer, *The A B C of the Federal Reserve System;* Laughlin, *Banking Reform;* Scott, *Banking Reform;* Sprague, *Banking Reform in the United States;* and the *Report of the Monetary Commission of the Indianapolis Convention.*

[5] In introducing the Federal Reserve Act in the House, Carter Glass said of the national banking system: "While we may boast that no note holder has ever lost a dollar, and that the losses of the depositors constitute an inconsiderable percentage of the total liabilities of

Cyclic fluctuations were consequently greatly sharpened and intensified. On the upward swing of the cycle, always a time when business men over-capitalize future earnings, credit was freely extended. No check was placed on the expansion. The boom periods regularly terminated in severe crises, which as regularly degenerated into panics, followed by prolonged and severe depressions. The asperities of cyclic fluctuations were much more severe in America than in England, France or Germany, where some degree of control was exercised by the central banks over credit extensions.

Efforts at Reform. It was not until the panic of 1893,[6] the first serious crisis in America since the resumption of cash payments in 1879, that the defects in the national banking system were so magnified as to attract general attention.[7] The members of the American Bankers Association were among the first to sponsor a definite plan of reform. At a meeting held in Baltimore, on October 10 and 11, 1894, the Association endorsed a plan, prepared by members of the Baltimore Clearing House, which was known thereafter as the Baltimore Plan.[8]

the banks, nevertheless, the failure of the system in acute exigencies has caused wide spread business demoralization and almost universal distress. Five times within the last thirty years financial catastrophe has overtaken the country under this system; and it would be difficult to compute the enormous losses sustained by all classes of society—by the banks immediately involved; by the merchants whose credits were curtailed; by the industries whose shops were closed; by the railroads whose cars were stopped; by the farmers whose crops rotted in the fields; by the laborer who was deprived of his wage. The system literally has no reserve force. The currency based upon the Nation's debt is absolutely irresponsive to the Nation's business needs. The lack of co-operation and co-ordination among the more than 7,300 national banks produces a curtailment of facilities at all periods of exceptional demands for credit. This peculiar defect renders disaster inevitable." *Congressional Record*, Vol. 50, p. 4642.

[6] For a good account of the crisis of 1893, see Sprague, *History of Crises under the National Banking System*, Chapter IV.

[7] The reasons for the failure to take cognizance of the defects in the national banking system prior to 1893 were twofold; in the first place, the system had proved itself, generally speaking, so much better adapted to the needs of the country, so much safer than and superior to the systems of banking which had preceded it, that few persons were disposed to attack it seriously; and secondly, questions of a monetary nature such as Greenbackism and Bimetalism had engrossed the attention of the public to the exclusion of purely banking problems. See Willis, *The Federal Reserve*, pp. 25–27.

[8] See *Proceedings of the Twentieth Annual Convention of the American Bankers Association*, pp. 69–77. Mr. Charles C. Homer, President of

Though this plan undoubtedly would have provided America with an elastic currency, it took no cognizance of the need for reserve holding agencies, of institutions whose bank rate could function as do the Bank rates in Europe, or of the need for a discount market. In his annual report on the State of the Finances for 1894, Secretary of the Treasury J. G. Carlisle submitted the outlines of a plan of currency reform which, in his opinion, would "secure within a reasonable time a safe and elastic currency and would result ultimately in the permanent retirement of United States legal-tender notes of both classes." [9] But this plan too had as its main objective the reform of the currency and not a thorough renovation of the banking system. Indeed the gradual elimination of the United States notes, the circulation and reissue of which Secretary Carlisle felt was a constant menace to the gold reserve and seriously embarrassed the administration of the finances, was the real motive inspiring the plan.

The Plan of the Indianapolis Monetary Commission. The most notable movement through this period toward a solution of the defects in the American banking system was that made by the Indianapolis Monetary Commission.[10] A bill embodying the proposals of the Commission was introduced by Representative Jesse Overstreet in the Fifty-Fifth Congress, Second Session, on January 6, 1898. It is quite probable that this bill would have provoked constructive action on the part of Congress had not the Spanish-American war intervened.[11] While the plan of the Commission was quite superior to the proposals endorsed by the American Bankers Association or to those made by Secretary Carlisle,

the Second National Bank of Baltimore, laid the plan before the Convention. Its acceptance was moved by A. Barton Hepburn. The details of the Baltimore plan are given in the Appendix.

[9] *Annual Report of the Secretary of the Treasury on the State of the Finances for the year 1894*, pp. lxxv and lxxvi. The details of Carlisle's plan are given in the Appendix.

[10] See *Report of the Monetary Commission of the Indianapolis Convention*. The University of Chicago Press, 1898. In listing the defects of the American banking system the Commission emphasized the inelasticity of the national bank note, the inequality of interest rates in various sections of the country and the vast amount of government credit currency in circulation without adequate provision for its redemption. See Report, pp. 28 and 29. The details of the proposals of the Commission may be found in the Appendix.

[11] The Gold Standard Act of 1900 did embody some of the minor recommendations of the Indianapolis Monetary Commission, but in its failure to provide America with an elastic currency it cannot be said to be a constructive piece of legislation.

it failed, as did they, in providing for any agency or means of credit control. Though it would have provided America with a safe and elastic currency, it did not present a solution of the other and equally pressing defects in the national banking system, such as the immobility, rigidity and scattered nature of the reserves, the lack of a discount market and of a central control over bank rates. Emphasis was laid on the need for an elastic currency practically to the exclusion of all other needs.

Fowler's Proposals. In 1901 the Hon. Charles N. Fowler, a Representative from New Jersey, became Chairman of the Banking and Currency Committee of the House. As he was an ardent advocate of banking and currency reform, many entertained optimistic hopes that improvements would speedily occur. Though the Committee under his leadership was one of the most active in the lower House and though a series of reform measures was introduced in Congress,[12] not one of them was granted the courtesy of a debate nor received the slightest consideration from the party in power. The indifference of the Republican party toward banking reform at that time may be attributed to the hostile predisposition of its leaders, and especially to the antipathy of Senator Aldrich, Chairman of the Senate Finance Committee.

The Aldrich-Vreeland Act. The experiences of the panic of 1907 finally awakened the country to the need of banking reform. No longer was it an academic question; it had become of the greatest practical importance to all. The insistence of the public that Congress bestir itself and enact measures which would prevent the recurrence of such a disgraceful financial episode, spurred the members to action and a plethora of bills

[12] The following measures were introduced by Rep. Fowler before the panic of 1907:

1. H. R., 10,289, 55th Congress, 2nd Session.
   Introduced June 15, 1898, House Report, No. 1575.
2. H. R., 13,363, 57th Congress, 1st Session.
   Introduced April 5, 1902, House Report, No. 1425.
3. H. R., 4831, 58th Congress, 2nd Session.
   Introduced April 11, 1904. House Report, No. 2349.
4. H. R., 23,017, 59th Congress, 2nd Session.
   Introduced Dec. 20, 1906. House Report, No. 5629. This bill was substantially that advocated by the American Bankers Association in 1906.

Many other plans of reform were proposed through this period; among them was one proposed by Maurice L. Mühleman and one by the New York Chamber of Commerce. See Mühleman, *Monetary and Banking Systems*, p. 206.

was introduced.[13] Representative Fowler and Senator Aldrich, chairmen of the two committees of Congress having to do with banking measures, set to work immediately to prepare bills, which, after receiving the endorsement of their respective committees, were introduced in Congress during January of 1908. The continuation and enlargement of our bond-secured bank note circulation was proposed in the Aldrich Bill, which contemplated the "coinage" of other than United States bonds into an "emergency currency."[14] This bill passed the United States Senate on March 27, 1908. In his measure, Representative Fowler sought to eliminate the bond-secured note and substitute an asset currency capable of responding to seasonal and cyclic demands for money. Though the Fowler Bill had been endorsed by the House Committee on Banking and Currency, it was not favorably regarded by the party leaders of the House.[15] The matter of banking reform was consequently taken from the hands of the House Committee and at party caucuses a bill was prepared and adopted which was better suited to the wishes of the organization. This measure, known as the Vreeland Bill, provided for the issuance of an "emergency currency" on bonds and commercial paper.[16]

[13] President Roosevelt, in response to public demand, urged provision for emergency currency and financial reform in his message to Congress on December 3, 1907 and later in his special messages of March 25 and April 27, 1908.

[14] In a speech delivered before the Senate on February 10, 1908, Senator Aldrich claimed that one advantage of his plan would be to "give a better standing to railroad securities," and that whatever the government could do to achieve this "within the limits of absolute safety and without any cost to itself" should be done. The danger involved in adopting the policy of coining securities into bank notes to raise their value on the exchanges is apparent.

The Aldrich Plan aroused intense opposition on the part of the thinking public; among those who actively opposed the bill were Victor Morawitz, Horace White, James B. Forgan, A. Barton Hepburn, and Charles S. Hamlin. In addition numerous organizations disapproved of the measure, including the National Association of Credit Men (See *Congressional Record*, Vol. 42, pp. 5434–5435).

[15] See Willis, *The Banking Question in Congress*, pp. 874–875. Representative Fowler's bill received quite general support from bankers and economists. Andrew Carnegie, Lyman J. Gage and Horace White were among its active proponents.

[16] The fluctuating part of the currency of a nation should be related to such business operations as the marketing of goods and the production of consumable commodities. As these operations give rise to commercial paper, which fluctuates as business increases or declines, the elastic part

Representative Fowler bitterly assailed the makeshift character of this substitute for his own measure, attacking its failure to provide adequately for the redemption of the notes issued and its seeming partiality to the financial centers.[17] On May 14, 1908, the Vreeland Bill passed the House, the Republican members voting in accordance with their leaders' orders. Conference Committees were appointed to unify and harmonize these two measures, with the Aldrich-Vreeland Act appearing as the product of their labors. This became a law on the 30th of May. Generally speaking, the final measure, in emphasizing the bond-secured note and in limiting the amount of notes that might be issued on commercial paper, resembled the Aldrich Bill more closely than it did the Vreeland. The Aldrich-Vreeland Act was based on utterly erroneous banking principles and theory, as any act must be which provides for the issuance of an "emergency currency." What the country needed "was not a make-shift legislative deformity, designed to help out a desperate situation, but a careful revision and a wise reformation of the entire banking and currency system of the United States whereby panics may be prevented, or, if not prevented, under which their violence may be diminished and the evils consequently greatly abated." [18] The authors failed to see the necessity for centralizing the reserves of the country, for establishing agencies of credit control, or, in short, the need for a thorough renovation of the banking system. Instead they naïvely provided for the issuance of an

of the currency should be based on commercial paper which itself is elastic, expanding as business increases. See testimony of Professor Sprague, Senate Document, No. 232, 63rd Congress, 1st Session, p. 514.

[17] *Congressional Record*, Vol. 42, pp. 6269–6270.

[18] From a speech by Carter Glass in the House, *Congressional Record*, Vol. 42, p. 7069. The Aldrich-Vreeland Act remained on the statute books for more than six years before a dollar of "emergency currency" was issued. Though periods of stringency occurred from time to time, the rates of interest exacted were regarded as so onerous that banks were unwilling to ask for currency. Not until the Fall of 1914, when a very acute crisis was precipitated by the outbreak of the war in Europe, were bank notes issued under the provisions of the Act. The total amount of emergency currency issued then came to $382,502,645. The first issue was made on August 4, 1914 and the last on February 12, 1915. The "emergency currency" was issued to 1361 banks in forty-one states. By May 1, 1915, practically the whole amount had been retired and Federal Reserve notes substituted. See *Annual Report of the Comptroller of the Currency*, December 6, 1915, Vol. 1, pp. 44–45; and Dodge, *The Aldrich-Vreeland Emergency Currency*.

"emergency currency" as a panacea for all the economic ills which had affected American life.[19]

The National Monetary Commission created by sections 17, 18 and 19 of the Aldrich-Vreeland Act was organized immediately with Senator Aldrich as chairman, Representative Vreeland as vice-chairman, and with A. Piatt Andrew as special assistant.[20] The Commission continued its labors until March, 1912, when it was dissolved by an act of Congress passed the preceding August. Before its dissolution, it prepared a plan of reform, known as the Aldrich Plan,[21] which was introduced into Congress by Senator Burton [22] on January 8, 1912, and referred to the Senate Finance Committee. The Aldrich Plan was never debated in either House, as the Democratic victories in 1910 had dislodged the Republican machine from the control of the House and seriously impaired its efficiency in the Senate. Distrusting Senator Aldrich and suspecting him of being sympathetic towards the "money trust," the Democratic leaders were unwilling to adopt and sponsor his proposals for banking reform.

[19] The details of the Fowler, Vreeland and Aldrich Bills and Aldrich-Vreeland Act are given in the Appendix.

[20] For an account of the work of the National Monetary Commission, see Weston, *The Studies of the National Monetary Commission.* In addition to the proposals of the National Monetary Commission, a host of other reform measures were suggested after the panic of 1907 by various persons, including Charles N. Fowler, Maurice L. Mühleman, O. M. W. Sprague and Paul M. Warburg. The reform measures proposed after the panic of 1907 took cognizance of the importance of providing for an elastic deposit currency and did not lay sole emphasis upon elastic note-issue provisions as did the proposals advocated through the decade from 1890 to 1900.

[21] The Aldrich Plan may be found in the *Congressional Record*, Vol. 48, Part I, pp. 744–752. According to A. Piatt Andrew, the one great contribution of the National Monetary Commission lay in its emphasis of the fact that it was credit, not merely in the form of note circulation, but primarily in the form of deposits, that must be made flexible and responsive to business needs. See, *The Essential and the Unessential in Currency Legislation*, by A. Piatt Andrew, p. 2. While this represents the point of view of Mr. Andrew it must be remembered that the Aldrich Plan was not the first to emphasize this point. In some of the other plans the need for an elastic deposit currency was stressed.

The Aldrich Plan was endorsed by President Taft in a message to Congress dated December 21, 1911. See, *Congressional Record*, Vol. 48, p. 587; and as well by his Secretary of the Treasury, Franklin McVeagh. See *Report on the State of the Finances*, 1911, p. 2.

[22] The Aldrich Plan was discussed in the House of Representatives by E. B. Vreeland, on February 6, 1912, while the House was having an Army Appropriation Bill under consideration.

The Aldrich Plan. The Aldrich Plan proposed the creation and establishment for a period of fifty years of the National Reserve Association of the United States, with its head office in Washington and with fifteen branches in as many districts in the United States. All national banks and those state banks and trust companies which complied with certain requirements were to be eligible for membership. No bank was required to become a member. The capital stock of the Reserve Association was to be owned by the member banks, each subscribing for an amount equal to 20% of its paid-in and unimpaired capital, one-half of which was to be paid in immediately and one-half subject to call. When the paid-in capital of the National Reserve Association equaled $100,000,000, it was to begin operations. The subscribing banks within each of the fifteen districts were to be grouped into local associations of not less than ten banks, with an aggregate capital and surplus of not less than $5,000,000. Each local association was to have a board of directors chosen entirely by the member banks. The board of directors of each of the fifteen branches was to consist of not less than 12 members, five-sixths of whom were to be chosen by the local associations and one-sixth by the board itself. There were to be forty-six members on the board of directors of the National Reserve Association, thirty-nine to be chosen by the branches and seven others, including the Governor and two Deputy-Governors, the Secretaries of the Treasury, Agriculture, Commerce and Labor, and the Comptroller of the Currency. The thirty-nine members chosen by the branches were to serve for terms of three years each, one-third retiring every year. The Governor of the National Reserve Association, serving for a term of ten years, was to be selected by the President of the United States, from a list of three names submitted to him by the Board; while the two Deputy-Governors, serving for terms of seven years each, were to be chosen directly by the Board itself. The National Reserve Association was given the power of discounting eligible paper for, and of making Lombard loans to, subscribing banks, of investing in United States bonds, of dealing in gold coin and bullion, of fixing rates of discount, of issuing bank notes, of holding the reserves of those member banks which so willed it, and of establishing foreign agencies.[23]

[23] A number opposed the Aldrich Plan on the ground that the National Reserve Association would be too largely under the domination of bankers and that the public's interest would not be adequately represented. See Kemmerer, *Some Public Aspects of the Aldrich Plan of Banking*

The Glass Bill. Anticipating a victory in the Fall of 1912, the Democratic leaders in Congress felt that an early investigation of banking and currency conditions in the United States would be desirable as a basis for formulating corrective measures. The Banking and Currency Committee of the House was directed to make such a study by a resolution passed on the 24th of February, 1912.[24] The Committee was authorized to sit as a whole or by sub-committee, during the sessions of the House or during the recess, and was empowered to send for persons and papers, to administer oaths, and to employ expert assistance. By an amendment passed on April 25, the Committee was further instructed to investigate the degree of financial concentration in America and into the possible existence of a "money trust." [25]

To facilitate these investigations, the Banking and Currency Committee was divided into two sections; the one, under the direction of Carter Glass, was to recommend legislation designed to reform the American banking system, and the other, under the direction of Mr. Pujo, was to propose means of curbing the power of the "money trust." The former began its active work during the first part of April, engaging H. Parker Willis, then Dean of the College of Political Science at George Washington University, as expert adviser.[26] A survey was first made of all the reformative legislation which had been proposed since the crisis of 1893.[27] After a series of discussions the Committee reached the conclusion that a central bank was not suitable to

Reform; and Scott, *The Administration and Control of the Proposed Central Reserve Association.* The American Bankers Association at its convention in New Orleans approved of the Aldrich Plan, and it was also favorably regarded by the National Citizens League. (See *Commercial and Financial Chronicle*, Bankers' Convention Section, December 2, 1911, p. 194; and Laughlin, *Banking Reform.*)

A good bibliography of the articles appearing on the Aldrich Plan may be found in. *Selected Articles on a Central Bank of the United States*, Debators' Handbook Series. Minneapolis; H. W. Wilson Co., 1910.

[24] This resolution (H. Res. 429) was introduced by Representative Henry of Texas. See *Congressional Record*, Vol. 48, pp. 2382–2419.

[25] The amendment was also introduced by Representative Henry. (H. Res. 504). See *Congressional Record*, Vol. 48, pp. 5336–5346.

[26] See Senate Document No. 232, 63rd Congress, 1st Session, p. 3014. Dr. Willis has never been given due credit for his work in connection with the Federal Reserve Act, for it was he who did the major part of the work in drafting the bill. Many others have assumed or been given credit for doing this, whereas it was Dr. Willis who advised the Committee in all that it did and who was the genius of the act.

[27] Willis, *The Federal Reserve Act in Congress*, p. 37.

American conditions and that a district type of organization, in which the banks of the country should participate, was to be preferred.[28] With this general idea in mind a bill was drafted during the Summer and the early part of the Fall of 1912. On December 26, the substance of the proposed measure was outlined to President-elect Wilson at his home in Princeton, New Jersey.[29] He expressed it as his belief that the proposed bill should provide for the complete reform of the American banking system and for a permanent type of banking organization under a central control but organized as local units. While it was thought best not to make public the draft of the bill until the new administration came into power, it was decided to hold public hearings at which the opinion of qualified witnesses could be secured on the principal lines of thought on which the committee had been working.

The sub-committee of the House Committee on Banking and Currency began its public hearings on January 7, 1913, which continued until the 28th of February.[30] The witnesses were informed that the platform of the Democratic party adopted at Baltimore in July, 1912, precluded the Committee from considering the establishment of a central bank or of such a reserve association as was proposed by Senator Aldrich.[31] In case the witnesses were convinced that the Aldrich Plan was the very best which had been suggested, they were informed that the Committee would be desirous of receiving their opinion as to the next best plan.

A large number of bankers, economists and representatives of commercial and agricultural interests testified, including among others A. Barton Hepburn, Victor Morawitz, Paul M. Warburg, Prof. J. Laurence Laughlin, the Hon. Charles N. Fowler, Sir Edmund Walker and Prof. Royal Meeker. The witnesses were

[28] Willis, *The Federal Reserve Act in Congress*, p. 37.

[29] *Ibid.*, p. 38.

[30] *Hearings before the sub-committee of the Committee on Banking and Currency in 13 parts.* Washington; Government Printing Office, 1913.

[31] The plank in the platform condemning the Aldrich Plan read as follows:—

We oppose the so-called Aldrich Bill or the establishment of a central bank, and we believe the people of the country will be largely freed from panics and consequent unemployment and business depression by such a systematic revision of our banking laws, as will render temporary relief in localities where such relief is needed, with protection from control or dominion by what is known as the Money Trust.

Senate Report 133, 63rd Congress, 1st Session, part 2, p. 106.

questioned particularly as to the probable success of a regional plan for the organization of reserve banks, the desirability of guaranteeing bank deposits, the question of the issuance of currency directly by the government, the manner in which the proposed institution should be controlled, etc. At the close of the hearings the bill was revamped and presented to President Wilson for his general approval. This bill (H. R. 6454) was introduced in the House on June 26, 1913, and was referred to the newly appointed committee on Banking and Currency. After being changed in some one hundred and sixty-four particulars [32] it was again introduced in the House (H. R. 7837) on August 24, endorsed by the Committee on Banking and Currency,[33] and passed by the Democratic caucus with only nine adverse votes.[34] At this point an attempt made by Secretary McAdoo to substitute for the Glass Bill a plan of his own by which the Treasury would have gone more or less extensively into the banking business failed. President Wilson declined to support McAdoo's proposals, holding to his original decision to support the bill endorsed by the Committee. On September 9, the House began its consideration of the Glass Bill, which, after a short desultory debate, passed on the 18th of the same month.[35]

The Glass Bill Not a Copy of the Aldrich Plan. It is a wide-spread and yet absolutely fallacious belief, that the plan for the Federal Reserve System as introduced by Representative Glass in the House was a mere plagiarism of the Aldrich Plan.

[32] See *Congressional Record*, Vol. 51, p. 169. [2]

The changes made by the Committee included the establishment of the Federal Advisory Council to appease the banking interests, the lengthening of the maturity of eligible paper as a concession to the agricultural interests, and various textual improvements. See Willis, *The Federal Reserve Act in Congress*, p. 45, and speech of Representative Platt, *Congressional Record*, Vol. 50, p. 4813.

Representative Glass, in speaking of the opposition of the farmer to the measure declared: "A persistent and pernicious effort has been made to create the impression that this bill, in some unexplained way, discriminates against the American farmer. . . . We [the Committee on Banking and Currency] have sought to do exact justice to all classes: and any public man who would have us do otherwise affronts the intelligence and disparages the patriotism of the American farmer no less than he outrages the sense of justice of the American merchant and banker." *Congressional Record*, Vol. 50, p. 4646.

[33] Of the fourteen Democratic members of the House Committee on Banking and Currency, three voted against the bill.

[34] *Congressional Record*, Vol. 50, p. 4672.

[35] *Ibid.*, Vol. 50, p. 5129.

Nothing could be further from the truth as Senator Aldrich's own scathing denunciation of the Glass Bill would testify.[36] Considered from the point of view of the organization and control of the Federal Reserve Banks, the Glass Bill differed materially from the Aldrich Plan. Many of the technical provisions, such as those governing the rediscounting and open-market operations of the proposed institutions, are quite similar even as to phraseology. But here it must be remembered that any plan for banking reform would have had to provide for rediscounting agencies, and would have had to define paper in much the same way as those rulings which govern the discount policies of central banks in Europe. While the discount provisions of these two plans do here and there show much similarity, there are important and very fundamental differences in the two bills. These we shall now discuss.

The Discount Provisions in the Glass Bill and Aldrich Plan Compared. In the Aldrich Plan the National Reserve Association of the United States was given authority to fix rates of discount, which, when so fixed, were to be uniform throughout the United States in all districts and at all branches. The Glass Bill provided on the other hand that each one of the twelve Federal Reserve Banks which were to be established, might fix its own rate of discount (subject to the review and determination of the Federal Reserve Board) and which theoretically could differ from the rates established in all of the other districts. This is a difference of primary importance. Would it be feasible, would it be economically sound to have a Bank rate uniform in all parts of the country? The sponsors of the Aldrich Plan asserted that it would be, which in the last analysis amounted to an assertion that the pure economic interest rate was or would shortly become the same in all sections. In 1913 market rates of interest varied widely as between the different parts of the country, a difference which cannot entirely be attributed to the defects in the national banking system but which must be attributed in part to variations in economic development. The

[36] See Willis, *The Federal Reserve Act in Congress*, p. 49. Senator Aldrich stigmatized the Federal Reserve Act as socialistic. See *Banking Reform in the United States by Aldrich*, pp. 31-91. For a comparison of the Aldrich Plan with the Glass Bill see *Congressional Record*, Vol. 50, Appendix, p. 283. As a matter of fact the Glass Bill more closely resembled a bill introduced in the House on March 29, 1910 by Rep. Fowler, than any previous measure. See Fowler, *The United States Reserve Bank*, etc., p. 9.

older states of the East had accumulated a surplus of capital, the supply of which relative to the demand was large, and therefore interest rates were low. In the less highly developed regions, time had not permitted a large accumulation of capital goods; the demand for such goods was intense and interest rates were high. If the official rate of discount of the National Reserve Association of the United States equaled or ranged above the market rates of interest in the less-developed regions, the Association would do little or no rediscounting in the East. If the official rate were to equal or slightly exceed the market rates in the East, it would rule so far below market rates in the West as to encourage the subscribing bankers to discount as large a part of their portfolio as possible with a branch of the Association and loan the proceeds at the higher market rates. This procedure would lead to intense speculation and inflation, and would in no whit alter the economic interest rate which falls only as the general fund of capital, the product of labor and waiting, increases at a faster rate than the demand.[37] In Chapter II, it has been noted that even in as small a nation, relative to the United States, as is Germany, the Reichsbank found it advisable to have different rates of discount, a policy which finally had to be abandoned by reason of political pressure. Professor Sprague, in testifying before the Senate Committee on Banking and Currency, when the Glass Bill was being considered, cautioned them against entertaining the idea that there could be one rate of discount for the whole country:[38] "If you make a uniform rate [standing above the market rates in the South and West] no loans could be made in New England or the Middle Atlantic States in ordinary times. I believe that the bulk of the business of an institution, such as was proposed by the monetary commission would be in the West and Southwest. . . . Moreover, it would not be desirable. It is never desirable or safe to largely and rapidly increase the credit facilities enjoyed in any community. Increase of credit facilities should be paralleled by an

[37] See Marshall, *Principles of Economics*, p. 534.

[38] Senate Document, No. 232, 63rd Congress, 1st Session, pp. 363–364. Professor Willis expressed the same thought:

"The Federal Reserve Act was framed upon the theory that . . . a uniform rate of discount was neither practical or desirable for a country possessed of so great an extent of territory as the United States, and containing within itself so many different industrial conditions and such widely varying demand for, and supply of, capital." Willis, *The New Banking System*, p. 598.

increase in the permanent wealth of the community, in improved lands, buildings, factories, etc." It was one of the great excellences of the Glass Bill that each one of the twelve regional banks was to be permitted to establish its own rate of discount. The rates of discount could thus reflect the differences existing between the economic development of the various parts of the country.

Eligible Paper. Both the Glass Bill and the Aldrich Plan defined paper eligible for rediscount in practically the same terms, as notes and bills of exchange issued or drawn for agricultural, industrial, or commercial purposes, not including notes or bills issued or drawn for the purpose of carrying stocks, bonds or other investment securities. The Glass Bill limited the maturity of paper eligible for rediscount to ninety days unless the cash reserves of the discounting Federal Reserve Bank exceeded one-third of its total outstanding demand liabilities, exclusive of its Federal Reserve notes, by an amount to be fixed by the Federal Reserve Board. In that event a Federal Reserve Bank was to be granted the authority to rediscount paper running for as long as one hundred twenty days. However, not more than 50% of the paper rediscounted for any member bank was to have a maturity exceeding ninety days. The Aldrich Plan insisted on paper of shorter maturity than did the Glass Bill. The National Reserve Association of the United States was to be allowed to rediscount, through one of its branches, notes and bills of depositing banks which matured within twenty-eight days and had been made thirty days prior to the date of the rediscount. The amount so rediscounted for any one bank was not to exceed its capital. Provided that a depositing bank had secured the guarantee of its local association, the National Reserve Association, through one of its branches, was to be allowed to rediscount such of its notes and bills as had more than twenty-eight days to run but not more than four months. The total amount of commercial paper which a local association might guarantee was not to exceed the capital and surplus of the member banks forming the association. The Glass Bill set no limit on the amount of eligible paper running for ninety days or under that a regional bank might rediscount for any member bank. The Aldrich Plan on the other hand limited the amount of paper which the National Reserve Association, through a branch, might rediscount to twice the capital plus the surplus of the banks belonging to any one of the local associations. This is not such a serious limitation,

when we remember that the National Reserve Association could not begin operations until the paid-in and unimpaired capital of the member banks amounted to $1,000,000,000. What should determine, generally speaking, the character of commercial paper rediscounted by a central reserve holding bank? Obviously, the paper should be of such nature as to insure at all times the liquidity of the bank. To achieve this, the paper should arise from and be related to some actual commercial transaction and should not exceed in life the length of the underlying commercial credit period of the nation in question. In most of the European nations, it is stipulated that the paper which central banks may rediscount must arise from actual commercial transactions and the maturity is limited generally to ninety days. Even assuming that the liquidity of central reserve holding banks is insured by rediscounting paper of this length and by rediscounting it in such a manner that approximately one-ninetieth of it will fall due on each banking day, the life of the rediscounted paper should in no event exceed the length of the underlying transaction.[39]

The Aldrich Plan Would Have Allowed Lombard Loans. Whenever in the opinion of the Governor of the National Reserve Association, such opinion to be concurred in by the Executive Committee and the Secretary of the Treasury, the public interest demanded it, the Association was to be permitted, through one of its branches, to discount the direct obligations of a depositing bank provided that such obligations were protected by the endorsement of its local association and provided that the endorsement of the local association was fully protected by the deposit of satisfactory securities which were to be held by the local association for the account of the National Association. The loans so made were not to exceed three-fourths of the value of the securities pledged. In providing in this way for Lombard loans and for the extension of credit by the National Reserve Association on securities, the way was open to all the dangers of excessive credit expansions. In Europe it is customary to discriminate against Lombard loans by charging a rate of interest on such advances higher than the Bank rate. Central bankers there feel that funds extended on securities are all too often used for speculative or fixed-capital purposes. As the National Reserve Association was to have but one Bank rate, it could not have discriminated against Lombard loans in this

[39] In this connection, see Warburg, *The Discount System in Europe*, p. 6.

manner. Of course, the permission of the Secretary of the Treasury and of the Executive Committee would have had to be secured before the Association could extend funds on securities, but if sufficient political pressure were exerted or if these officials were proponents of "soft" monetary theories, such acquiescence would not be difficult to secure. In prohibiting loans on securities, the Glass Bill was superior in this respect to the Aldrich Plan.

The Need for a Discount Market. For years past those interested in banking reform in America have realized the necessity for developing a discount market in New York, where acceptances, particularly those arising from foreign trade transactions, might be bought and sold. Such markets existed in some of the financial centers of Europe, the largest in London and Berlin, and had come to play a very important rôle, an indispensable rôle, in the financial organization of those countries. Briefly the functions of such markets may be summarized as follows:[40]

1) Discount markets tend to stabilize gold movements between nations. When, for instance, mark exchange was at a discount and the forces which were depressing the mark were but temporary in their nature, the Reichsbank often corrected the exchanges, without raising the Bank rate, by buying mark drafts in the Berlin discount market or by selling drafts drawn in foreign currencies. Could not the Federal Reserve System do the same thing? Assuming that it could, the amount of gold shipped between Europe and America would be reduced and consequently less capital would be tied up in this form.

2) Discount markets tend to equalize short-term interest rates prevalent in the financial centers of the world. Were the dollar draft to gain wide popularity and were interest rates to rise in New York, it is likely that bankers and investors over the world would buy dollar drafts and remit funds to New York to profit by the higher rates of interest. This course of action would tend to bring interest rates in the financial centers of the world into an equilibrium. Even before 1913 bankers in foreign countries exported capital to New York as interest rates rose, and it was anticipated that a discount market in New York would increase this practice.

3) Discount markets help to regulate the cash and investment

[40] See Rovensky, *The Acceptance as the Basis of the American Discount Market.* A pamphlet published by the National Bank of Commerce in New York, July 1919.

position of banks. A discount market allows banks to invest their surplus funds in a most liquid and safe form of commercial paper and in turn to sell this should it become necessary for them to increase their cash resources. In the past the call loan market was used for this purpose. But the consensus of opinion was that it was much inferior to a discount market.[41] In the first place, call loans could not be liquidated during a crisis, when banks are most in need of extra funds; and secondly, the dependence of banks on the call loan market diverted a considerable proportion of the banking resources of the country into speculative channels.[42]

Prerequisites of a Discount Market. Discount markets can flourish only in creditor nations, such as England and America, nations with surplus funds awaiting investment at low rates of interest. In a borrowing nation, where interest rates are apt to be high and where, because of a dearth of funds, there would be no purchasers of acceptances, a discount market could not develop. But the creditor position of America would not of itself insure the development of a discount market; there were other prerequisites which may be summarized briefly as follows:

1) National banks must be empowered to accept time bills of exchange. By decisions rendered in many federal and state courts it had been held that national banks were without authority to do this under the terms of the National Banking Act.[43] A few states had indeed permitted banks chartered under their laws to accept time bills of exchange, but only a negligible quantity of dollar drafts had been drawn. In Europe the banker's acceptance served as the basis of all discount markets and it must needs be employed

[41] The following testimony of Mr. Vanderlip before the Senate Committee on Banking and Currency bears on the subject: "You understand me to say that if we have a central bank, at which we can rediscount commercial paper, making commercial paper a liquid asset, we will then have no necessity for devoting a large amount of our funds to call loans on stock exchange collateral, and can divert the funds now used for that purpose to commercial loans." Senate Document No. 232, p. 1961, 63rd Congress, 1st Session.

For a good discussion of the advantages of a discount market see Westerfield, *Banking Principles and Practice*, pp. 1013–1015.

[42] With a discount market in New York, America would be in a position to finance her trade through dollar drafts, would no longer pay tribute to Europe for this and Europeans would no longer come into the possession of American trade secrets through seeing the bills of lading and invoices accompanying the drafts.

[43] See Laughlin, *Banking Reform*, pp. 93–94.

in America too if a discount market were to develop here. The promissory note, so popular in American finance, could not serve as the basis of such an international discount market as we have been describing above; even though it had in a measure, bought and sold as it was by bill brokers and commercial paper houses, served as the basis of a national discount market. It would be well-nigh impossible for foreign bankers to determine the credit of the maker. Single name paper does not necessarily, though it may, indicate a transfer of goods. In Europe the acceptance generally did. The promissory note may be used for the purpose of obtaining fixed capital or funds for speculative purposes. The acceptance, under ideal conditions, is never used for such purposes. In short, the promissory note had no standing in the discount markets of the world.

2) The development of a discount market in New York was dependent upon the extent to which bankers would be willing to forego investing their funds in the call loan market, in securities, or in promissory notes, and to purchase acceptances; also upon

3) the extent to which American capital was exported abroad, and American banks were organized in foreign lands, and America became a short-time financier of international trade and the extent to which firms for acceptance and discount were organized.

4) As the keystone for the structure, there were needed central reserve holding agencies, which would stand ready at all times to absorb the surplus stock of eligible acceptances from the market.

Acceptance Provisions in the Aldrich Plan and Glass Bill. Both the sponsors of the Aldrich Plan and of the Glass Bill recognized the necessity for developing a discount market and both measures contained provisions permitting national banks to accept time bills of exchange. The Aldrich Plan would have allowed national banks to accept both foreign and domestic bills of exchange having not more than four months to run to an amount not to exceed one-half of the capital and surplus of the accepting bank. The bills of exchange accepted by a national bank for any one interest, however, were not to exceed 10% of the capital and surplus of the accepting bank. The National Reserve Association was to be permitted to purchase such acceptances, when endorsed by subscribing banks, if prime bills and if maturing within ninety days. Under the provisions of the Glass Bill, on the other hand, National Banks were to be permitted to accept, to an amount not to exceed one-half of their paid-up

and unimpaired capital stock, bills of exchange which had arisen from foreign trade transactions and which matured within six months sight. Upon endorsement a Federal Reserve Bank was to be permitted to purchase such acceptances to an amount not to exceed one-half of the capital stock of the disposing bank.

The Reasons for Placing a Limit on the Bills of Exchange Which a National Bank Might Accept. If it were deemed an advisable thing to develop a discount market in America, why should both measures have imposed a limit on the bills of exchange which a national bank might accept? Few bankers in America at that time, it will be remembered, were acquainted with acceptance theory and practice as it had developed abroad. At best the use of the acceptance would be an exotic growth on American soil. Some banks unless restrained by statutory limitations were almost sure to abuse its use and to accept for their customers an amount wholly out of proportion to their resources. Particularly would this be the case when banks had extended their customers the maximum amount of credit in the form of loans allowed by law. The failure of these customers to put the bank into possession of a sufficiency of funds before the maturity of the acceptances would of necessity throw the whole burden for payment on the bank itself. So as the note-holder had been protected from loss by legislative safeguards in the past, it was felt best to protect the purchasers of bankers' acceptances and the standing of the American discount market among the financial centers of the world, by limiting the amount banks might accept. This amount happened to be 50% of the capital of the accepting bank because it was found that before the war that was about the normal acceptance liability of the joint-stock banks in England. Whenever it exceeded this the Bank of England issued a warning note.[44] Custom and precedent, not law, limited the acceptance liability of British banks; following the historic procedure in American banking, the sponsors of both measures thought it best to limit the acceptance liability of American banks by statute.

[44] "The Bank of England keeps a watchful eye over the market, which serves to restrain the granting of excessive acceptance credits, for no prime acceptor could afford to have his bills declined, or even discriminated against in rate, because of an over-supply of them in the market." Jay, *The Development of a Discount Market and Its Relation to Our Foreign Trade*, pp. 5 and 6.

For a discussion of the limitations put on acceptances, see Westerfield, *Banking Principles and Practice*, p. 1004.

Domestic Bankers' Acceptances. It is generally agreed that bankers' acceptances, owing to the difficulty of securing foreign credit information, are indispensable in foreign trade, a field to which they were limited by the Glass Bill. It is difficult to understand why the Aldrich Plan should have extended their use to domestic trade as well. Could it have been that the proponents felt they were needed in the financing of our domestic trade, that the domestic movement of goods was inefficiently financed, that domestic credit information was difficult to secure? Would it not have been reckless to allow the 7431 national banks, scattered all over the country, to engage in the acceptance business, "in business involving contingent liabilities—without one dollar of reserve behind them as a safeguard." [45] Permitting their use in domestic trade would invite the bank not well versed in acceptance practice or the bank which cared not a whit for the standing of the American discount market, to misuse the acceptance; to use it for the purpose of extending funds to a customer after it had advanced all it could in the form of loans, to use it as a medium for the extension of funds for fixed capital or speculative purposes. Such uses would soon rob it of its fair name and repute and endanger the standing of the American discount market. In limiting the use of the acceptance to the foreign field, the Glass Bill in reality limited it to those banks accustomed to handling the financing of America's foreign trade, which were probably the only ones having any knowledge of the principles governing its use as developed by European practice. Not that its use would not be abused by such banks; it has been, but all things considered it would be less liable to abuse under such restrictions than if extended to domestic trade and employed by all banks, regardless of their experience. At all events its development as an integral part in the financing of America's trade ought to be slow and gradual.

The statement is frequently made that domestic bankers' ac-

[45] From speech of Carter Glass in the House, *Congressional Record*, Vol. 51, p. 1304.

Westerfield, *Banking Principles and Practice*, p. 1007, outlines the use of the acceptance in the following terms: "Bankers' acceptances should be used for current commercial transactions only; they should not be used to finance permanent investments, to provide working capital, or to finance speculations. They should be used only to facilitate the movement of goods from producer to consumer. This includes storage in warehouse, provided the goods are awaiting reasonably immediate sale or delivery to consumers and are not carried as a mere speculation."

ceptances were a necessity for the equalization of interest rates over the country. But the equalization of interest rates can be brought about equally as well through the activities of commercial paper houses, inter- and intra-district rediscounting by the Federal Reserve Banks, without recourse to an instrument which could be so misused and diverted from its true purposes as the acceptance.

The Glass Bill did well in limiting the use of the acceptance to the foreign field. The later amendments to the Federal Reserve Act which permitted their use in domestic trade, though justified on the ground that they were needed in the financing of the staple crops due to the strain imposed by the war on the credit resources of the country were, as a matter of fact, unwarranted. Acceptances have been so misused in domestic transactions as to lead some authorities to advocate, in private at least, the repeal of those amendments.

Open-Market Powers. The open-market powers granted the proposed institutions by these two measures were practically identical, with the exception that branches of the National Reserve Association were to be permitted to buy bills of exchange only from subscribing banks. The Federal Reserve Banks, on the other hand, were to have authority to purchase from and sell to domestic or foreign banks, firms or corporations, prime bankers' bills, cable transfers and bills of exchange. The inability of the National Reserve Association to purchase bills from any but subscribing banks would have materially impaired its power to bring down interest rates had it so desired, in sections where they were being maintained at artificially high levels, and its power to intervene in any way in the money market.

The Aldrich Plan and Glass Bill Compared as to Credit Control. One of the most valuable services which a central reserve holding bank can render a community is the control it may exercise over credit extensions. It is only through such control that a central bank may prevent domestic inflation, rectify the exchanges, encourage imports of gold and in short perform all the duties so essential to successful central banking. Which one of these two institutions, the National Reserve Association of the United States as proposed in the Aldrich Plan or the Federal Reserve System as proposed in the Glass Bill, would have been in the better position to exercise credit control?

In the first place, the ability of the National Reserve Association to have exercised any surveillance over credit expansions

would have been impaired from the outset by the requirement of a uniform rate of discount over the country. A central bank cannot exercise credit control unless it is constantly in touch with the market. The rate at a central bank should ordinarily stand above the market rates but not so high above that it loses touch with the market and is unable to build up a portfolio of the best bills. Were the rate at the National Reserve Association to be above market rates in the West, the rate would be so high in the East that in normal times it would be constantly out of all touch with the Eastern money markets. Were the Bank rate to equal or to be above Eastern money rates, it would rule so far below market rates in the West that encouragement would be given to credit expansions. The regional banks as proposed in the Glass Bill were to conform their rates of discount to the actual economic conditions in the various districts, and in this way each one could be in constant touch with the developments transpiring in the local money market.

In the second place, the ability of central banks, such as those in Europe, to control credit depends in no small measure on the fact that, by force of custom, they are the depositaries of the reserves of other banks. The possession of these reserve moneys gives the central banks resources which they probably would not have otherwise and enhances considerably their power and prestige. Through this circumstance they come into possession of the gold stock (aside from the amount in circulation) of the respective nations. They are therefore the first to sense foreign and domestic drains of gold. Should it be their desire to stay the drain, they would charge a higher price for the gold in their vaults by raising the Bank rate. As holders of the ultimate banking reserves, the European central banks have the resources and ability,—not to compete with the joint-stock banks as frequently alleged, for such is not their aim,—but to exercise a constant oversight of the money market, to mop up the surplus funds in the market if this be necessary to tighten interest rates, to buy bills and notes in sections where interest rates are being maintained at artificially high levels, to build up a portfolio of foreign bills, and to become a nation-wide clearance and collection agency for checks, bills, and notes. How a central bank could exercise any degree of control and not hold the reserves of the joint-stock banks in part or in full is difficult to see. The Glass Bill followed the practice prevalent throughout Europe and provided that in the space of three years the reserves of the

member banks should be kept in part with the Federal Reserve Banks and in part in their own vaults. The Aldrich Plan would not have required the subscribing banks to keep their reserves with the National Reserve Association, though any deposits they might have with the Association would count as a part of their required reserves. The reserves of national banks would have been maintained, unless the national banks in question otherwise willed it, in the same amounts and in the same locations as before. The Aldrich Plan would not of itself have remedied the immobility and scattered nature of the banking reserves of America. Without holding at least a part of the reserve funds of the subscribing banks, and without requiring that the banks themselves hold the remainder, in order to eliminate competition from other reserve holding agencies, it is extremely doubtful whether the National Reserve Association would have been able to exercise any degree of credit control.

The National Reserve Association of the United States in Emergencies. The Aldrich Plan would have been an improvement over the national banking system—if nothing else, it would probably have prevented crises from degenerating into panics in America. Should the activities of central banks be confined or limited to times of great financial stress and strain; should they be only emergency institutions? Not if they are to serve most efficiently the interests of all, not if they are to attain their maximum usefulness. They must be constantly in touch with economic developments, checking a too rapid credit expansion if they can, issuing warnings if they cannot; encouraging more scientific and efficient methods of banking practice; gathering pertinent credit information and statistical data; aiding in the development of discount markets and in the better financing of domestic and foreign trade; and assisting in every way possible in the healthy economic growth of a nation. The true test of the Aldrich plan would thus have been found in its regular operations.

The Glass Bill in the Senate. Realizing that it must soon begin a consideration of the Glass Bill, the Committee on Banking and Currency of the Senate, with Senator Owen as Chairman, began public hearings on September 23, 1913, which continued until the 27th of October. A great host of witnesses [46] ap-

[46] The witness appearing before the Committee included, among others: Charles N. Fowler, James G. Cannon, C. A. Conant, James B. Forgan, Fred I. Kent, H. A. Moehlenpah, George M. Reynolds, Prof. O. M. W. Sprague, Frank Vanderlip and Prof. H. Parker Willis.

peared before the committee, whose testimony, including the questions asked by members of the committee, cover more than 3000 pages.[47] The problems in which the members of the Committee were particularly interested and about which they sought to be enlightened were; the feasibility of a uniform rate of discount throughout the United States, the desirability of graduated rates of discount and of limitations on the amount of paper which a Federal Reserve Bank might rediscount for a member bank, the possibility of guaranteeing bank deposits, the maturity of eligible paper, compulsory inter-district rediscounting, the manner in which Federal Reserve Notes were to be redeemed, and the number of regional banks which should be established.

The Owen and Hitchcock Bills. After the hearings had been concluded, the members of the Committee discussed the Glass Bill (which had come to the Senate on September 18) among themselves for some two weeks. The consensus of opinion was that the bill needed quite drastic changes, and that about half of the measure should be rewritten. The Committee was not at all agreed, however, on the exact manner of revising the bill and differences of opinion arose which split the twelve members into equal sections. The one composed of Senator Owen and five of his Democratic colleagues reported the Owen Bill to the Senate, while the other including Senator Hitchcock and the Republican members reported the Hitchcock Bill.[48] The two groups had agreed on the necessity of a greater concentration and mobilization of the banking reserves of the country, of an elastic currency; and on the desirability of promoting a discount market, of regional banks and of government control. The points of difference[49] centered upon the exact number of regional banks[50] which should be established, the method of sub-

[47] Hearings before the Committee on Banking and Currency, United States Senate, Senate Document No. 232, 63rd Congress, 1st Session.

[48] For the reports of these two sections and their respective measures, see Senate Report No. 133, parts 2 and 3, 63rd Congress, 1st Session.

The Glass, Owen and Hitchcock Bills are compared in Senate Document No. 242, 63rd Congress, 1st Session.

The Owen Bill changed the Glass Bill about 60% and the Hitchcock Bill changed it about 64%. Both the Owen and Hitchcock Bills changed practically the same sections in the Glass Bill. See *Congressional Record*, Vol. 50, p. 6014.

[49] See *Ibid.*, Vol. 50, p. 5994 and pp. 6012–6018, for a detailed discussion of these differences.

[50] The Hitchcock Bill proposed that only four regional banks be established instead of eight as was proposed by Senator Owen and twelve

scribing for the stock, of electing the directors and of administering the banks, the maturity of eligible paper, the matter of progressive discount rates, the manner of redeeming Federal Reserve notes,[51] and the reserves [52] which the regional banks should maintain against their liabilities.

The Discount Provisions of the Owen and Hitchcock Bills. The discount provisions in the Owen and Hitchcock Bills show radical departures from those in the House measures in that both:

> a) allowed Federal Reserve Banks to discount notes, drafts and bills drawn for the purpose of carrying or trading in the bonds and notes of the government of the United States.[53]

as proposed in the Glass Bill. The reasons for Senator Hitchcock's proposal were really twofold; in the first place, he felt that no matter how many regional banks were established, the resources of the New York Bank would be the same, but with eleven other banks the power of the New York Bank would be magnified more than if there were three other fairly large banks capable of meeting the seasonal needs in their sections without being forced to appeal to New York; and in the second place, with only four regional banks each covering a large territory, sectional differences in rates of discount would tend to become smaller than if there were 12 banks. (See *Congressional Record*, Vol. 50, p. 6015.)

[51] The Glass Bill provided that Federal Reserve notes might be redeemed in gold or lawful money. The danger in this provision lay in the opportunity it gave the regional banks to adopt a gold premium policy similar to that in force in France. Dr. Willis felt that this provision was unwise and that it should be changed to gold or gold certificates. (Sen. Document No. 232, 63rd Congress, 1st Session, p. 3030.) The Owen Bill provided that Federal Reserve Notes should be redeemed in gold at the Treasury Department and in gold or lawful money at the regional banks; the Hitchcock Bill provided that the notes should be redeemed solely in gold. The final measure followed the Owen Bill.

[52] The House Bill provided that the Federal Reserve Banks should maintan a 33⅓% gold or lawful money reserve against its demand liabilities (in reality the reserve against Federal Reserve notes under the Glass Bill was to have been 133⅓%—100% collateral and 33⅓% gold or lawful money); the Owen Bill provided that the Reserve Banks should maintain a gold or lawful money reserve of 35% against deposits and notes, the Hitchcock Bill for a 45% gold reserve against notes and a 35% gold or lawful money reserve against deposits. Dr. Willis felt that the reserves maintained by the Federal Reserve Banks would normally be much higher than 33⅓% as provided in the Glass Bill. (Sen. Document No. 232, 63rd Congress, 1st Session, p. 3057.)

[53] See Senate Document No. 264, 63rd Congress, 2d Session, p. 32. The Hitchcock Amendment would not only permit the discounting of notes, drafts and bills drawn for the purpose of carrying or trading in the bonds and notes of the United States as would the Owen but extended this pro-

b) permitted Federal Reserve Banks, if sanctioned by the Federal Reserve Board, to discount the direct obligations of member banks secured by the pledge and deposit of satisfactory securities.[54]

c) authorized national banks to accept time bills of exchange arising from domestic as well as from foreign trade.[55]

In these several respects both measures bore a class resemblance to the discount provisions of the Aldrich Plan. The danger of permitting the assets of central reserve banks to con-

vision to include the interest-bearing obligations of the dependencies of the United States, the principal and interest of which had been guaranteed by the United States.

[54] See *Ibid.*, p. 33. The Owen amendment read as follows: "The Federal Reserve Board may authorize the reserve bank of the district to discount the direct obligations of member banks, secured by the pledge and deposit of satisfactory securities; but in no case shall the amount so loaned by a Federal reserve bank exceed three-fourths of the actual value of the securities so pledged." The Hitchcock Amendment read as above but added that the amount so loaned was not to exceed one-half the amount of the paid-up and unimpaired capital of the member bank.

[55] The undesirability of permitting national banks to accept domestic time bills of exchange has been noted, see pp. 119–120 of this Chapter. It might be added that while testifying before the House Committee, Sir Edmund Walker, a Canadian banker, emphasized the point that the use of acceptances in domestic trade could be subject to great abuse:

Mr. Willis. "With reference to the matter of issuing acceptances, would you limit that power to banks of any particular size or would you limit it simply on the basis of the kind of transaction?"

. . . . . .

Sir Edmund Walker. "You might limit the total amount that it could give. Take a bank on the Pacific coast. If the trans-Pacific trade had been created, as it has not been yet to a very large exent, you can easily imagine a case where the bank in San Francisco or Seattle would accept for the transmission of Chinese or Japanese merchandise. That would be right, within limits. But if somebody in Oregon was trying to send wheat to Portland and a little local bank in the country would draw on the bank in Portland, goodness knows what that kind of a transaction might lead to."

Mr. W. "What might it lead to, as a matter of fact?"

Sir E. W. "It might lead to any bank that had an expensive executive using its credit facilities, after it had used its deposits and its asset currency, by putting out what would virtually be promissory notes."

Mr. W. "It would be a far more dangerous exercise of bank credit than under an asset currency?"

Sir E. W. "Much, yes. You would soon have a cry that those should be guaranteed in some form or other."

(Hearings before the Subcommittee of the Committee on Banking and Currency, House Hearings, pp. 670–671.)

sist of long-term, non-self-liquidating paper secured by stocks and bonds has unfortunately been often exemplified in the history of central banking. As to domestic bankers' acceptances, many experts felt that they were not needed in the financing of domestic trade and if introduced might encourage some wild-cat banking practices.

The discount provisions in the Owen and Hitchcock Bills differed from one another, in that:

a) the Hitchcock Bill introduced the idea that each member bank was entitled, as a matter of right, to an amount of credit from its Federal Reserve Bank equal to its capital stock at the lowest current rates of discount.[56] No member bank was to be permitted to discount an amount of paper exceeding the amount of its capital stock [57] excepting upon the payment of a higher rate of discount, the increase in the rate was to be 1% for an additional 50% of discounts or fraction thereof and 2% for all in excess. In no case was a Federal Reserve Bank to discount paper in excess of twice the amount of capital stock of a member bank without special authority from the Board.[58] This provision would seem to be the genius of the latter Phelan Act and of the idea of basic lines of credit. A desire on the part of Senator Hitchcock to insure that the small banker would receive relatively the same amount of credit from its Federal Reserve Bank as the large banker was the motive of this provision.

b) by the terms of the Owen Bill all eligible paper must have a maturity of ninety days, while the Hitchcock Bill, under certain conditions, allowed eligible paper to have a maturity of one hundred eighty days. Notes and bills admitted to discount were to be allowed a maturity of one hundred eighty days, with the exception that not more than 50% of the paper discounted for any member bank was to have a maturity exceeding ninety days nor was any member bank to have more than $200,000 of rediscounts having a maturity of more than ninety days, with its Reserve Bank. Senator Hitchcock believed that an injustice had been done the farmer in

[56] See statement of Sen. Hitchcock, Senate Document No. 232, 63rd Congress, 1st Session, p. 2864.

[57] That this was not such a serious limitation is apparent, when we realize that at the present time (1922) the capital of all the banks belonging to the Federal Reserve System amounts to $1,886,172,000 and the surplus to $1,561,043,000.

[58] See Senate Document No. 264, 63rd Congress, 2d Session, p. 34.

the Glass Bill in limiting the maturity of eligible paper to ninety days and under exceptional circumstances to one hundred and twenty days.[59] For instance, he asked Professor Willis when he appeared before the Senate Committee on Banking and Currency why the maturity of eligible paper had been limited to ninety days when many transactions in the West and South were for four or five months. Dr. Willis replied; I think I can say, without any violation of confidence that that was a matter of very serious consideration and a good deal of difference of opinion. After looking over all the data that could be had and consulting with the Treasury Department, I think those who were in charge came to the opinion that there would be an abundant supply of this ninety-day paper in the country. Secretary McAdoo sent out certain blanks to banks recently, asking them how much there would be. . . .

Sen. Hitchcock (interposing)—That was not done at the time.

Dr. W. Certainly not; but we did, at that time, get all the data there were and the later investigation has borne out our conclusion.

Sen. H. Did you call in country bankers to find out what paper they actually handled?

Dr W. Country bankers were before the House Committee; yes, sir.

Sen. H. Who were they?

Dr. W. I cannot remember now. May I add that there was a large correspondence with country bankers?

Sen. H. We have had a number of country bankers and I have had a large personal correspondence with country banks in my own state, and the almost universal testimony is, that the demand they have for rediscounts is at the time they are making five and six months' loans and that that paper is unacceptable under the terms of this bill.

Dr. W. May I add one thing right there? As I said a moment ago, the conclusion was reached that there was a sufficient supply of ninety-day paper in the country. For that reason it was believed that enough of a vehicle was provided for letting out the funds of these Federal Reserve Banks into general use, and the conclusion was reached that if there were a sufficient medium for letting out those funds everybody that was entitled to a discount, whether his paper was technically rediscounted at the Federal Reserve Bank or not, would get the benefit of it. Do you follow what I mean?

[59] See statement of Sen. Hitchcock, Senate Document No. 232, 63d Congress, 1st Session, p. 3037.

Sen. H. He would get it indirectly from his city correspondent.
Dr. W. Yes.[60]

c) the Owen Bill rendered inter-district rediscounting easier than did either the Glass or Hitchock Bills. The Glass Bill gave the Federal Reserve Board power to permit or require Federal Reserve Banks in times of emergency to rediscount the prime discounted paper of another Federal Reserve Bank, but at least five members of the Board must be present when such action was taken and all present consenting to the requirement. The interest charged the accommodated bank was to be not less than 1 nor more than 3% above the higher of the rates prevailing in the district immediately affected. The Hitchcock Amendment required that six of the members of the Board should concur in such action, and that the Board was to fix a special rediscount rate of not more than 3% in excess of the discount rate of the accommodated Reserve Bank. The Owen Amendment simply read that the Federal Reserve Board was to have power to permit or require Federal Reserve Banks to rediscount the discounted paper of another Federal Reserve Bank at rates of interest to be fixed each week or oftener by the Federal Reserve Board. Inter-district rediscounting is essential to the successful operation of a regional type of central reserve banks, by it the reserves of the various banks are rendered mobile, and funds can be quickly shifted from section to section to meet seasonal requirements or emergency demands. The danger involved in inter-district rediscounting is that its use will not be confined to temporary needs, seasonal or cyclic, that the money loaned will not be secured by the prime paper of the offering bank, and that funds may be drained from the wealthier sections of the country to less developed sections for fixed-capital purposes.

d) the Hitchcock Bill limited the maturity of domestic bankers' acceptances to four months, while the Owen Bill permitted them to run for six months. If bankers' acceptances were to be had in domestic trade, they should not be permitted to run for a longer maximum time than the length of the underlying transaction. Four months seems ample time to allow for the marketing of goods in America.

e) the Hitchcock Bill provided for the levying of a graduated tax on any Federal Reserve Bank whose reserve should fall below the legal minimum. Such a tax might indirectly affect the discount policy of a reserve bank if the Bank rate were raised.

[60] See Senate Document No. 262, 63d Congress, 1st Session, pp. 3036–3037.

The Federal Reserve Act Signed by President Wilson. The Hitchcock and Owen Bills were considered by the Senate until the 19th of December, at which time a vote was taken on the proposed amendments to the House Bill. The Hitchcock Amendments, voted for by all the Republicans and Senators Hitchcock (Dem.) and Poindexter (Prog.), failed to carry by three votes, and Senator Owen's (changed somewhat) [61] carried by some twenty votes. A conference committee was appointed at once to confer with representatives of the House in the preparation of the final measure. Within a very short time their task was accomplished. The Federal Reserve Act passed the House on the 22nd, the next day passed the Senate and was signed by President Wilson.

The act as finally passed more nearly resembled the House Bill than "anything that had intervened during the time the bill was going through the various permutations to which it was subjected in its slow progress from one stage to another of the legislative process." [62] In matters involving fundamental issues of theory the House held its own in every respct.[63]

[61] The changes that had been made in the original Owen Bill before its passage were:

1. It was provided that when the reserve of a Federal Reserve Bank against notes fell below 40%, a graduated tax was to be levied on the amount of deficiency, a tax which should be added to the discount rate.
2. Agricultural paper was permitted a maturity of six months. (See, Senate Document No. 335, 63rd Congress, 2nd Session.)

[62] Willis, *The Federal Reserve Act*, p. 13. For the points yielded by the House and Senate in conference, see *ibid.*, pp. 11 and 12.

[63] In testifying before the Senate Committee on Banking and Currency, Dr. Willis declared that the fundamentals in the Federal Reserve Act were:

1. The idea of regional banks.
2. The preservation of the autonomy of the regional banks and the close supervision of their dealings with one another by the Federal Reserve Board.
3. The provisions for open-market operations.
4. The provision that member banks should keep their reserves either in the form of cash in their own vaults, or in the form of credits, with its Federal Reserve Bank.
5. The granting to the Federal Reserve Board of considerable power over the regional banks.
6. The provisions for a uniform system of domestic exchange.
7. The idea that the Federal Reserve Banks should not be overloaded with government bonds. (Senate Document No. 232, 63rd Congress, 1st Session, pp. 3087–3088.)

CHAPTER IV

PROVISIONS IN THE FEDERAL RESERVE ACT GOVERNING THE BANK RATE, THE REDISCOUNT AND OPEN-MARKET OPERATIONS OF THE SYSTEM [1]

In all important particulars the final act resembled the Glass Bill. The discount provisions of the House measure were modified to only a slight extent in the Senate. Though this is true the discount provisions of the final Act have been changed frequently by later amendments. By the discount provisions of the Act is meant of course those which have to do with the fixing of the Bank rates, with the discounting of eligible paper, with outlining the acceptance powers of the member banks and the acceptances which the Regional Banks may discount and purchase, and finally those which have to do with the delineating of the open-market powers of the Reserve Banks. In this section there will be presented the discount provisions of the original Act followed by the changes which have been made by later amendments together with an abstract of the regulations of the Board interpreting these provisions.

The Bank Rate. Section 14, Clause D, of the Federal Reserve Act empowers each regional bank to

> establish from time to time, subject to review and determination of the Federal reserve board, rates of discount to be charged by the Federal reserve bank for each class of paper, which shall be fixed with a view of accommodating commerce and business.[2]

[1] For an excellent account of the statutory provisions of the Act governing the rediscount and open-market operations of the Reserve Banks as well as the Regulations of the Board, the rulings and opinions of the counsel, see *Commercial Banking Practice under the Federal Reserve Act*, published by the National Bank of Commerce in New York. See, also, Digest of Rulings of the Federal Reserve Board (1914–1923, inclusive) published recently by the Federal Reserve Board.

[2] The original Federal Reserve Act may be found, among other places, in *Congressional Record*, Vol. 51, pp. 1352–1361.

Recommendations for changes in rates of discount, submitted by the Federal Reserve Agent of each district, were at one time acted upon by

In one of the early drafts of the Reserve Act the Board was definitely empowered to fix the rates of discount to be charged by the Regional Banks.[3] This was so changed that in the final act the initiative for changes in rates of discount were seemingly entrusted to the separate Banks. The word "seemingly" has been used, for the Attorney General of the United States ruled in December 1919, that the Federal Reserve Board has the right, if it chooses to exercise it, to fix and determine, under its power of review, a rate previously established by a Reserve Bank even though its directors be opposed to such a change.[4] While the Board has not been forced to exercise the rights it possesses by virtue of this interpretation of Section 14, Clause D, it has through suggestions made from time to time to the Reserve Banks had a very marked influence over the fixing of the Bank rates.[5] Its influence was particularly apparent through the war period when the Regional Banks were expected to establish Bank rates which would fit in with the policies of the Treasury Department. In testifying before the Joint Commission of Agricultural Inquiry Governor Harding explained that two methods are customarily followed by the Regional Banks in informing the Board of their desire to change their rates of discount.[6] At times the Banks communicate in an informal manner with the Governor of the Board informing him of their desire to make changes in their rates and requesting that he ascertain the views of the other members. On other occasions the Regional Banks dispatch a telegram stating that their directors have voted that certain rates take effect on such and such a date subject to the approval of the Board. In entrusting control over the Bank rate to two bodies,

the Board on Thursdays of each week, following in this respect the customary practice in England. (*Federal Reserve Bulletin*, 1915, p. 13.) All such recommendations are now given attention by the Board whenever they are received.

The discount rates established by the regional banks are not subject to the usury laws of the different states (*Federal Reserve Bulletin*, 1915, p. 24.)

Federal Reserve Banks may establish forward rates of discount to apply to bankers' acceptances and other forms of eligible paper. (*Federal Reserve Bulletin*, 1915, p. 97.)

[3] See *Hearing before the Joint Commission of Agricultural Inquiry*, Part 13, p. 278.

[4] *Ibid.*

[5] See Norton, *Bank Rate and the Money-Market in the United States*, p. 483.

[6] *Hearing before the Joint Commission of Agricultural Inquiry.* Part 13, pp. 313–314.

each of which was to act as a check and balance on the other, this clause is typical of much in the Reserve Act.[7]

The Phelan Act. Clause D was amended by an act approved April 13, 1920, which authorized the Reserve Banks to establish "subject to the approval, review, and determination of the Federal Reserve Board" rates of discount "graduated or progressed on the basis of the amount of the advances and discount accommodations extended by the Federal reserve bank to the borrowing bank." [8] It will be remembered that this principle was embodied in the Hitchcock Bill, by the terms of which each member bank was to be entitled as a matter of right to a minimum amount of accommodation from its Reserve Bank; for accommodation beyond this minimum amount, a higher rate of discount was to be charged. The Phelan Act was repealed by the Agricultural Credits Act approved on March 4, 1923.

The Bank Rate to Accommodate Business. Section 14, Clause D states that the Bank rate is to be fixed with a view of accommodating commerce and business. How may business best be accommodated? Some would reply through a boundless supply of credit extended at low rates of discount. Liberal extensions of credit at abnormally low rates, however, might greatly magnify the ups and downs of the business cycle, leading to inflated profits at one time and great losses at another. Business will best be accommodated, if the Reserve Banks, through their discount policy, are enabled to reduce the amplitude in cycle fluctuations and so effect a greater degree of stability in economic life.

The Federal Advisory Council and the Bank Rate. The Federal Advisory Council (composed of a banker representative from each one of the twelve districts) is given power by Section 12 of the Act to,

> call for information and to make recommendations in regard to discount rates, rediscount business, note issues, reserve conditions in the various districts, the purchase and sale of gold or securities by reserve banks, open-market operations by said banks, and the general affairs of the reserve banking system.

The Council possesses, as signified in its title, only advisory

[7] For an account of the checks and balances in the Federal Reserve Act, see Laughlin, *The Banking and Currency Act of 1913*, pp. 311–312.

[8] The Phelan Act may be found in the *Federal Reserve Bulletin*, 1920, p. 498.

power. If composed of disinterested experts, men interested in banking as a science, whose advice would be accepted, it might be able conceivably to exercise considerable influence over the discount policies of the regional banks.

Penalties for Deficient Reserves. In periods of emergency, the Federal Reserve Board is authorized to,

> suspend for a period not exceeding thirty days, and from time to time to renew such suspension for periods not exceeding fifteen days, any reserve requirement specified in this act: *Provided,* That it shall establish a graduated tax upon the amounts by which the reserve requirements of this act may be permitted to fall below the level hereinafter specified: *And provided further,* That when the gold reserve held against Federal reserve notes falls below 40 per centum, the Federal Reserve Board shall establish a graduated tax of not more than one per centum per annum upon such deficiency until the reserves fall to 32½ per centum, and when said reserve falls below 32½ per centum, a tax at the rate increasingly of not less than 1½ per centum per annum upon each 2½ per centum or fraction thereof that such reserve falls below 32½ per centum. The tax shall be paid by the reserve bank, but the reserve bank shall add an amount equal to the said tax to the rates of interest and discount fixed by the Federal Reserve Board.[9]

Whenever the reserve percentage falls below the legal minimum, either because of a foreign or domestic drain, presumably the

[9] Section 11, Clause C. The tax imposed by law by reason of a deficiency of reserves against Federal Reserve notes is quite inadequate. The reserve might decline to 32½% and yet require the imposition of only a 1% tax. In the case of the Reichsbank, the law imposed a 5% tax as soon as the reserve had declined below the legal minimum of 33⅓%. It was not required, however, that this tax be added to the discount rate. Under the Federal Reserve Act the gold reserve against notes would have to decline to 25.84% before a 5% tax would be imposed. The tax is to be levied only upon the amount by which the reserve falls short of the required amount. For example, let us assume that a Federal Reserve Bank has $100,000,000 of notes outstanding; against which the bank is required by law to have a gold reserve of 40%, or $40,000,000. Suppose the bank to have but 35%, or $35,000,000, in gold as a reserve against such notes. The deficiency in this case would be $5,000,000, and under the terms of the law a maximum tax of 1% would be levied upon this amount. If the reserve were less than $32,500,000, the provisions for a graduated tax would then come into operation.

The phraseology of this section is peculiar in that it speaks of the rates of interest and discount as fixed by the Board, neglecting the part played by the Reserve Banks.

Reserve Banks would be taxed automatically, and the Bank rates rise as mechanically, which would tend towards a contraction of credit. It has unfortunately been true, in the history of American banking, that the minimum reserves for banks as established by law have tended to become the actual reserves. If this were to be true in the case of the Federal Reserve Banks, if the reserves as required by law were to become the actual reserves, this section would have to be invoked from time to time as the reserves of the Regional Banks dropped below the legal minimum. It was the expectation of the framers of the Act that the actual reserves, maintained by the Reserve Banks, would be much above those required by law and that this section would rarely, if ever, have to be invoked.

The Federal Reserve Board May Reject Applications for Federal Reserve Notes or Make an Interest Charge on Those Issued in Excess of the Gold Cover. Section 16 of the Act, which stipulates the manner of issuing Federal Reserve notes, has an indirect bearing on the control of credit by the Reserve System, in that it gives the Board power to reject entirely the application of a Reserve Bank for notes, or, if the application is granted to impose interest charges on the notes which are supplied in excess of those covered by gold or by gold certificates. These parts of Section 16 read as follows:

> Federal reserve notes, to be issued at the discretion of the Federal Reserve Board for the purpose of making advances to Federal reserve banks through the Federal reserve agents as hereinafter set forth and for no other purpose, are hereby authorized. . . .
>
> The board shall have the right, acting through the Federal reserve agent, to grant in whole or in part, or to reject entirely the application of any Federal reserve bank for Federal reserve notes; but to the extent that such application may be granted the Federal Reserve Board shall, through its local Federal reserve agent, supply Federal reserve notes to the banks so applying, and such bank shall be charged with the amount of notes issued to it and shall pay such rate of interest as may be established by the Federal Reserve Board on only that amount of such notes which equals the total amount of its outstanding Federal reserve notes less the amount of gold or gold certificates held by the Federal reserve agent as collateral security.

Should the general level of prices have been rising in America and should the Board, exercising the rights conferred on it by this

section, refuse further requests for Federal Reserve notes, the upward movement could soon be checked. It has been observed by students of banking that in every nation there is a certain relationship, determined by the business habits of that country, beween the amount of money in circulation and deposit currency. In America, this ratio, from 1910–1922 inclusive, averaged about 5 to 1, $5 of deposit currency for every $1 of money in circulation.[10] This means that firms, individuals and corporations in this country preserve a more or less definite ratio between their cash and check transactions, between their deposit balances and money on hand. Money is used for wage payments and for small miscellaneous

[10] By the term "money" the author means that medium of exchange which is accepted freely and without reference to the credit or character of the person offering it. In America, this would include, gold coins, gold certificates, silver certificates, the Greenbacks, the Treasury notes of 1890, National Bank notes, Federal Reserve notes, Federal Reserve Bank notes and silver, copper and nickel coins.

Prof. W. I. King, in an article entitled "Is Our Currency Elastic?" written for the Bankers Statistics Corporation of New York (Special Service, Vol. II, No. 23, Sept. 21, 1920) computed the amount of money in circulation, individual demand deposits, and the ratios of the one to the other from 1880–1920. The Federal Reserve Bank of New York has estimated totals for 1920, 1921 and 1922, which the author secured through the courtesy of the Statistics Department. These figures for the years 1910–1922 follow:

Year	*Money in circulation (in millions)*	*Individual demand deposits (in millions)*	*Ratio of individual demand deposits to money in circulation*
1910	$1,639.6	$6,873.2	4.19
1	1,614.1	7,782.1	4.82
2	1,677.6	7,794.4	4.65
3	1,770.6	7,720.5	4.36
4	1,732.8	8,880.0	5.12
5	1,771.6	8,963.7	5.06
6	2,090.2	11,198.1	5.36
7	2,360.9	14,186.2	6.01
8	3,450.0	15,784.5	4.58
9	3,686.0	18,933.9	5.14
1920	4,331.3	21,081.3	4.87
1	3,940.1	19,629.4	4.98
2	3,729.2	20,626.9	5.53
			Average 4.975

transactions, checks for the remainder.[11] An equilibrium is struck between the use of the two methods of payment. Should business men have an excess of cash, they would deposit it; should they have an excessive amount of deposits relative to the amount of money on hand, they would cash a part of their deposits. Bank deposits therefore can not continue to expand indefinitely without causing an increase in the amount of money in circulation. For as deposits increase and prices rise, business men naturally need additional amounts of money for payments which they customarily make with cash.

If, at a time when bank deposits were on the increase and prices were rising, member banks could not secure Federal Reserve notes to meet the extra monetary demand (the Board refusing to issue further amounts) the rise would be checked. Of course the member banks could for a while meet the demand by withdrawing gold and lawful money from the Reserve Banks, and by issuing National Bank notes. The first course of action would cause the reserve percentage of the System to decline precipitously.[12] Should the reserve be forced below the minimum required by law, the taxes on the deficiency of reserves would come into force. The issuance of National Bank notes would be limited necessarily by the amount of bonds bearing the circulation privilege. As a general proposition, therefore, it may be stated that the refusal of the Board to grant requests for Federal Reserve notes would directly or indirectly check, within a short time, an upward movement in the price level,[13] unless gold were imported to satisfy the demand for money, or unless money substitutes such as manufacturers' pay checks, cashiers' checks, clearing house loan certificates, etc., were employed. The levying by the Board of a tax on the amount of Federal Reserve notes issued in excess of those covered by gold might also tend towards a credit con-

[11] In this connection, see Fisher, *The Purchasing Power of Money*, pp. 49–53.

[12] A withdrawal of gold and lawful money from the Reserve Banks would cause the reserves to decline much more rapidly than the issuance of a similar amount of Federal Reserve notes. Thus if a Reserve Bank had two billions of dollars of liabilities and one billion dollars of reserve funds, an increase of 500 millions in the liabilities would cause the reserve percentage to decline from 50% to 40%; but the withdrawal of 500 millions of dollars of reserve funds would cause the reserve percentage to fall from 50% to 33⅓%.

[13] The danger of applying this method in bringing about a credit contraction is that it might check the upward movement suddenly and cause such a breakdown in the credit machinery as to precipitate a panic.

traction if this tax were passed on by the Reserve Banks to the rediscounting banks in the form of higher discount rates. The Act does not stipulate, however, that this tax should be added to the discount rate. Conceivably the Federal Reserve Banks, themselves, might absorb this tax as was so often done in the case of the tax imposed on a deficiency of the Reichsbank's reserves.

THE REDISCOUNT PROVISIONS OF THE FEDERAL RESERVE ACT

The provisions in the Act relating to the Bank rate have been covered. It has become rather traditional to look upon the Bank rate as par excellence the best regulator of credit expansion. Not sufficient attention has been devoted to the relationship between the control of credit and the requirements governing the eligibility of paper presented for rediscount.[14] The stricter the eligibility requirements the smaller becomes the volume of paper potentially rediscountable at the Reserve Banks. The stricter the eligibility requirements then the less would be the capacity of the Reserve Banks to expand unless the standards of commercial paper should be raised to meet the requirements. The provisions of the Act outlining the requirements which paper eligible for rediscount must meet will be presented at this point.

The Purpose of Rediscounting. If any idea may be considered as fundamental to the Federal Reserve Act it is that of coöperative action. Through coöperative action on the part of the member banks and of the Reserve Banks were the defects of the old National Banking System, immobility of reserves and inelasticity of bank notes and deposit credits, to be corrected. Through permitting and providing for the rediscounting of eligible paper, the banking resources of the member banks are rendered mobile as within each Reserve district. The member banks deposit with the Reserve Bank in question, a part of their resources which is then used as a basis for credit extensions

[14] "The kind of paper made acceptable for rediscount under the decree of the Federal Reserve Board is all-important. The essential point in the new law is the distinction between mercantile and investment paper. It was not intended that the paper presented for rediscount should have been drawn to carry stocks, bonds, etc., or goods in warehouse held for higher prices; nor to aid in securing capital for fixed investment in irrigation, water-power, street-railway, manufacturing plant or similar purposes. On the other hand, it was intended to encourage the movement of goods from the producer to the consumer." Laughlin, *The Banking and Currency Act of 1913*, p. 424.

to those among them which require it by reason of seasonal or other needs. Through inter-district rediscounting, coöperative action is provided among the Reserve Banks and the banking resources are made mobile as within the nation.

To insure impartiality in extensions of credit to member banks, Section 4 of the Act directs that the board of directors of each Reserve Bank shall

> administer the affairs of said bank fairly and impartially and without discrimination in favor of or against any member bank or banks and shall, subject to the provisions of law and the orders of the Federal Reserve Board, extend to each member bank such discounts, advancements and accommodations as may be safely and reasonably made with due regard for the claims and demands of other member banks.

Governor Harding explained the meaning of this section in the following terms before the Joint Commission of Agricultural Inquiry:[15]

> This means that if the directors of any Federal reserve bank, through prejudice or for any other reason, wanted to refuse reasonable and proper discounts which might safely be made to a member bank—that is, if they were prejudiced against that bank and should refuse reasonable and proper discounts which might safely be made to that bank—then that bank could take an appeal to the Federal Reserve Board, and the Federal Reserve Board could order the Federal reserve bank to discount for that bank, if it had good and eligible paper to offer.

Section 13

The provisions in the Act governing intra-district rediscounting follow:

> Upon the indorsement of any of its member banks, with a waiver of demand, notice and protest by such bank, any Federal reserve bank may discount notes, drafts, and bills of exchange arising out of actual commercial transactions; that is, notes, drafts, and bills of exchange issued or drawn for agricultural, industrial or commercial purposes, or the proceeds of which have been used, or are to be used, for such purposes, the Federal Reserve Board to have the

[15] Part 13, p. 278.

right to determine or define the character of the paper thus eligible for discount, within the meaning of this act. Nothing in this act contained shall be construed to prohibit such notes, drafts, and bills of exchange, secured by staple agricultural products, or other goods, wares, or merchandise from being eligible for such discount; but such definition shall not include notes, drafts, or bills covering merely investments or issued or drawn for the purpose of carrying or trading in stocks, bonds, or other investment securities, except bonds and notes of the Government of the United States. Notes, drafts, and bills admitted to discount under the terms of this paragraph must have a maturity at the time of discount of not more than ninety days: *Provided,* That notes, drafts, and bills drawn or issued for agricultural purposes or based on live stock and having a maturity not exceeding six months may be discounted in an amount to be limited to a percentage of the capital of the Federal reserve bank, to be ascertained and fixed by Federal Reserve Board.[16]

Any Federal reserve bank may discount acceptances which are based on the importation or exportation of goods and which have a maturity at time of discount of not more than three months, and indorsed by at least one member bank. The amount of acceptances so discounted shall at no time exceed one-half the paid-up capital stock and surplus of the bank for which the rediscounts are made.

The aggregate of such notes and bills bearing the signature or indorsement of any one person, company, firm or corporation rediscounted for any one bank shall at no time exceed ten per centum of the unimpaired capital and surplus of said bank; but this restriction shall not apply to the discount of bills of exchange drawn in good faith against actually existing values.

The rediscount by any Federal reserve bank of any bills receivable and of domestic and foreign bills of exchange, and of acceptances authorized by this act, shall be subject to such restrictions, limitations, and regulations as may be imposed by the Federal Reserve Board.

Analysis of Section 13. Section 13 of the Federal Reserve Act does two things: in the first place, it definitely declares certain types of paper ineligible for discount, and in the second place, it describes in a general way the paper that is to be

[16] No limit has been imposed on the amount of single-name paper which a Federal Reserve Bank may discount though there was some talk of doing this before the Reserve Banks opened. See, *First Annual Report of the Federal Reserve Board,* pp. 152–155.

eligible.[17] Notes, drafts and bills are ineligible if the proceeds are to be used for permanent or fixed investments of any kind, such as land, buildings or machinery, or for speculative purposes. Likewise, paper is excluded which has been issued or drawn for the purpose of trading in stocks, bonds and investment securities other than in the bonds and notes of the United States. Eligible paper is defined as that arising from actual commercial transactions; that is, notes issued or drawn for agricultural, commercial or industrial purposes, or the proceeds of which have been or are to be used for such purposes.[18] Paper other than that based on agricultural or live stock transactions must have a maturity at time of discount of not more than ninety days. The latter was

[17] Even though a bill or a note may technically be eligible for discount, a Reserve Bank is under no obligaion to rediscount it but may use its discretionary power. (*Federal Reserve Bulletin*, 1920, p. 1301.)

[18] In defining paper eligible for discount, the Act determines the upper limit of the volume of Federal Reserve notes to be issued, assuming that such notes are all issued on eligible paper as defined above and assuming that the price level remains the same.

A good discussion of eligible paper may be found in Powell, *Eligibility for Discount*.

In the *Federal Reserve Bulletin* for December, 1920, pp. 1302–1303, the Board in a formal ruling distinguished between commercial and agricultural paper as follows:

Distinction between Agricultural Paper and Commercial Paper.—The purchase and sale of any articles or commodities including agricultural products is a commercial rather than an agricultural transaction. Consequently the note of a dealer, whether it is given in payment for articles or commodities purchased for resale or is discounted by the dealer at his bank to provide funds with which to purchase such articles or commodities, can be eligible for rediscount only as commercial paper, even though the articles or commodities will be used by the ultimate purchasers for agricultural purposes. Such a note can be eligible for rediscount, therefore, only when it has a maturity at the time of rediscount of not more than 90 days. The note of a farmer, however, given in payment for articles or commodities purchased may be considered agricultural paper which is eligible for rediscount when it has a maturity at the time of rediscount of not exceeding six months, provided that the articles or commodities purchased are to be used by the farmer for agricultural purposes and are not in the nature of permanent or fixed investments. So, also, of course, the note of a farmer, discounted by him at his local bank for the purpose of providing funds to purchase such articles or commodities, may be eligible for rediscount as agricultural paper when it has a maturity at the time of rediscount of not more than six months. Since the purchase and sale of agricultural products is a commercial rather than an agricultural transaction, a note given to a farmer in payment for agricultural products grown by him can not be eligible for rediscount as agricultural paper, but may be eligible as commercial paper if it has a maturity at the time of rediscount of not more than 90 days.

permitted a life of six months in order to quiet criticism from agricultural interests. Summing up, Section 13 prescribes that paper eligible for discount must have arisen from some agricultural, industrial, or commercial transaction; that it must bear the endorsement of a member bank; that it must comply with the rules and regulations of the Reserve Board, and that it must mature within a specified time. Paper which has arisen from speculative transactions is prohibited as well as paper, excepting that drawn as a result of trading in Government securities, arising from investment operations.

Amendments to Section 13. Section 13 has been amended [19] frequently since the passage of the Act. On March 3, 1915, it was amended so as to permit the Federal Reserve Board, at its discretion, to increase to 100% of the paid-up and unimpaired capital stock and surplus of a member bank the amount of acceptances, based on the importation or exportation of goods, which it might accept. A Federal Reserve Bank might rediscount such paper if endorsed by at least one member bank, and if having a maturity at time of discount of not more than three months. On September 7, 1916, the following amendments were adopted: [20]

1) the indorsement by a member bank of notes, drafts and bills was henceforth to be deemed as a waiver of demand, notice and protest as to its indorsement. Prior to this amendment member banks were required to execute waivers of demand, notice and protest.

2) notes, drafts and bills based on commercial and industrial transactions were to have a maturity of not more than 90 days exclusive of days of grace and paper based on agricultural transactions or on live stock, a maturity of six months exclusive of days of grace. The original act had not stated whether the life of the paper, eligible for discount, included the days of grace or not.

3) the aggregate of notes, drafts and bills of exchange bearing the signature of any one borrower (other than bills of exchange drawn in good faith against actually existing values), which might be discounted by a Reserve Bank for a member bank, was limited to 10 per cent of the unimpaired capital and surplus of the member bank.

[19] For a summary of all the amendments to the Federal Reserve Act, see *Seventh Annual Report of the Federal Reserve Board*, 1920, pp. 316–326.

[20] The act of September 7, 1916, is printed in the *Federal Reserve Bulletin*, 1916, p. 439.

Prior to this amendment, Federal Reserve Banks were not permitted to discount notes or bills bearing the signature or indorsement of any one person, company, firm, or corporation to an amount in excess of 10 per cent of the capital and surplus of the member bank, whether such person, firm, or corporation was a borrower or not.

4) the total amount of paper having a maturity of six months that might be discounted by a Reserve Bank was to be limited to a certain percentage of the total assets of the Reserve Bank. Prior to this amendment such paper was limited to a certain percentage of the capital of a Reserve Bank instead of to its total assets.

5) this act further amended Section 13 so as to authorize Federal Reserve Banks to make advances to member banks on their promissory notes for periods not exceeding 15 days [21] secured by notes, drafts, bills of exchange or bankers' acceptances eligible for rediscount or purchase, or by bonds and notes of the United States.[22]

6) inasmuch as this act permitted the member banks to accept drafts or bills of exchange growing out of transactions involving the domestic shipment of goods or drawn to furnish dollar exchange, the Reserve Banks were authorized to discount such acceptances if they had a maturity of not more than three months' sight exclusive of days of grace and if they were indorsed by at least one member bank.

Changes Made by the Agricultural Credits Act. Section 13 was amended in many important particulars by the Agricultural Credits Act approved on March 4, 1923. In the first place the notes, drafts and bills of exchange of factors making advances exclusively to producers of staple agricultural products in their raw state were made eligible provided that they matured within ninety days exclusive of days of grace. In addition to

[21] One member bank acting through another may obtain the discount of its paper secured by Government bonds for a period as long as ninety days, although a member bank acting alone may not tender its collateral note to its Federal Reserve Bank which runs for more than 15 days.

[22] When this amendment was adopted, September 7, 1916, the public debt was quite small, some 1190 millions of dollars, and as 700 millions of dollars had already been used as a basis for the issue of National Bank notes, it was not anticipated that a very large amount of notes would be rediscounted which had been drawn for the purpose of trading in the obligations of the United States Government, or that the advances made to member banks on their promissory notes secured by government obligations would be very large. This amendment was recommended by the Board in its *Second Annual Report*, p. 22.

this change the Reserve Banks were permitted to discount or purchase bills of exchange payable at sight which were drawn to finance the shipment of agricultural products and were also permitted to discount acceptances arising from agricultural purposes which had a life of six months exclusive of days of grace. These amendments are inserted in full:

> Upon the indorsement of any of its member banks, which shall be deemed a waiver of demand, notice, and protest by such bank as to its own indorsement exclusively, and subject to regulations and limitations to be prescribed by the Federal Reserve Board, any Federal reserve bank may discount or purchase bills of exchange payable at sight or on demand which are drawn to finance the domestic shipment of nonperishable, readily marketable staple agricultural products and are secured by bills of lading or other shipping documents conveying or securing title to such staples: *Provided,* That all such bills of exchange shall be forwarded promptly for collection, and demand for payment shall be made with reasonable promptness after the arrival of such staples at their destination: *Provided further,* That no such bill shall in any event be held by or for the account of a Federal reserve bank for a period in in excess of 90 days. In discounting such bills Federal reserve banks may compute the interest to be deducted on the basis of the estimated life of each bill and adjust the discount after payment of such bills to conform to the actual life thereof.
>
> . . . . . .
>
> Any Federal reserve bank may discount acceptances of the kinds hereinafter described, which have a maturity at the time of discount of not more than 90 days' sight, exclusive of days of grace, and which are indorsed by at least one member bank: *Provided,* That such acceptances if drawn for an agricultural purpose and secured at the time of acceptance by warehouse receipts or other such documents conveying or securing title covering readily marketable staples may be discounted with a maturity at the time of discount of not more than six months' sight exclusive of days of grace.

The same measure added an entirely new section. This (Section 13a) deals wholly with the eligibility of agricultural paper.

> Sec. 13a. Upon the indorsement of any of its member banks, which shall be deemed a waiver of demand, notice, and protest by such bank as to its own indorsement exclusively, any Federal reserve bank may, subject to regulations and limitations to be prescribed by

the Federal Reserve Board, discount notes, drafts, and bills of exchange issued or drawn for an agricultural purpose, or based upon live stock, and having a maturity, at the time of discount, exclusive of days of grace, not exceeding nine months, and such notes, drafts, and bills of exchange may be offered as collateral security for the issuance of Federal reserve notes under the provisions of section 16 of this Act: *Provided,* That notes, drafts, and bills of exchange with maturities in excess of six months shall not be eligible as a basis for the issuance of Federal reserve notes unless secured by warehouse receipts or other such negotiable documents conveying or securing title to readily marketable staple agricultural products or by chattel mortgage upon live stock which is being fattened for market.

That any Federal reserve bank may, subject to regulations and limitations to be prescribed by the Federal Reserve Board, rediscount such notes, drafts, and bills for any Federal Intermediate Credit Bank, except that no Federal reserve bank shall rediscount for a Federal Intermediate Credit Bank any such note or obligation which bears the indorsement of a non-member State bank or trust company which is eligible for membership in the Federal reserve system, in accordance with section 9 of this Act.

Any Federal reserve bank may also buy and sell debentures and other such obligations issued by a Federal Intermediate Credit Bank or by a National Agricultural Credit Corporation, but only to the same extent as and subject to the same limitations as those upon which it may buy and sell bonds issued under Title I of the Federal Farm Loan Act.

Notes, drafts, bills of exchange or acceptances issued or drawn by coöperative marketing associations composed of producers of agricultural products shall be deemed to have been issued or drawn for an agricultural purpose, within the meaning of this section, if the proceeds thereof have been or are to be advanced by such association to any members thereof for an agricultural purpose, or have been or are to be used by such association in making payments to any members thereof on account of agricultural products delivered by such members to the association, or if such proceeds have been or are to be used by such association to meet expenditures incurred or to be incurred by the association in connection with the grading, processing, packing, preparation for market, or marketing of any agricultural product handled by such association for any of its members: *Provided,* That the express enumeration in this paragraph of certain classes of paper of coöperative marketing associations as eligible for rediscount shall not be construed as render-

ing ineligible any other class of paper of such associations which is now eligible for rediscount.

The Federal Reserve Board may, by regulation, limit to a percentage of the assets of a Federal reserve bank the amount of notes, drafts, acceptances, or bills having a maturity in excess of three months, exclusive of days of grace, which may be discounted by such bank, and the amount of notes, drafts, bills, or acceptances having a maturity in excess of six months, but not exceeding nine months, which may be rediscounted by such bank.

Rediscounts for Member State Banks. By an act passed on June 21, 1917, Section 9 of the original Act which had to do with the admission of state banks into the System was amended to read in part as follows:

> That no Federal reserve bank shall be permitted to discount for any State bank or trust company notes, drafts, or bills of exchange of any one borrower who is liable for borrowed money to such State bank or trust company in an amount greater than ten per centum of the capital and surplus of such State bank or trust company, but the discount of bills of exchange drawn against actually existing value and the discount of commercial or business paper actually owned by the person negotiating the same shall not be considered as borrowed money within the meaning of this section. The Federal reserve bank, as a condition of the discount of notes, drafts, and bills of exchange for such State bank or trust company, shall require a certificate or guaranty to the effect that the borrower is not liable to such bank in excess of the amount provided by this section, and will not be permitted to become liable in excess of this amount while such notes, drafts, or bills of exchange are under discount with the Federal reserve bank.

This clause in Section 9 was amended a second time on July 1, 1922, to read as follows:

> That no Federal reserve bank shall be permitted to discount for any State bank or trust company notes, drafts, or bills of exchange of any one borrower who is liable for borrowed money to such State bank or trust company in an amount greater than that which could be borrowed lawfully from such State bank or trust company were it a national banking association.[23]

[23] This amendment may be found in the *Federal Reserve Bulletin*, August 1922, p. 933.

Section 9 as amended on June 21, 1917, contained language intended to be identical with Section 5200 of the Revised Statutes which governs the loaning powers of National Banks. It was observed that if changes were later made in Section 5200 without corresponding changes in Section 9 of the Federal Reserve Act, a discrepancy would occur and national and state banks would be placed on a different basis. The effect of the amendment of July 1, 1922, was to place both national and state banks on the same footing, in case changes should at any future time be made in Section 5200.

Rediscounts of War Paper until October 31, 1921. In order to facilitate the sale of Liberty bonds and of certificates of indebtedness subsection 11 (m) of the original Act was stricken out by an act passed on March 3, 1919, and the following section substituted which permitted a Reserve Bank to discount for any member bank notes bearing the signature or indorsement of any one borrower in excess of 10% of the member bank's capital and surplus but not to exceed 20% provided that the amount in excess of 10% of the member bank's capital and surplus be secured by obligations of the United States issued since April 24, 1917:

> Upon the affirmative vote of not less than five of its members, the Federal Reserve Board shall have power to permit Federal reserve banks to discount for any member bank notes, drafts, or bills of exchange bearing the signature or indorsement of any one borrower in excess of the amount permitted by section nine and section thirteen of this Act, but in no case to exceed twenty per centum of the member bank's capital and surplus: *Provided, however,* That all such notes, drafts, or bills of exchange discounted for any member bank in excess of the amount permitted under such sections shall be secured by not less than a like face amount of bonds or notes of the United States issued since April twenty-fourth, nineteen hundred and seventeen, or certificates or indebtedness of the United States: *Provided further,* That the provisions of this subsection (m) shall not be operative after December thirty-first, nineteen hundred and twenty.

By an act approved on February 27, 1921, the provisions of this subsection were amended slightly and extended until October 31, 1921:

> Upon the affirmative vote of not less than five of its members the

Federal Reserve Board shall have power to permit Federal reserve banks to discount for any member bank notes, drafts, or bills of exchange bearing the signature or indorsement of any one borrower in excess of the amount permitted by section 9 and section 13 of this Act, but in no case to exceed 20 per centum of the member bank's capital and surplus: *Provided, however,* That all such notes, drafts, or bills of exchange discounted for any member bank in excess of the amount permitted under such sections shall be secured by not less than a like face amount of bonds or notes of the United States issued since April 24, 1917, for which the borrower shall in good faith prior to January 1, 1921, have paid or agreed to pay not less than the full face amount thereof, or certificates of indebtedness of the United States: *Provided further,* That the provision of this subsection (m) shall not be operative after October 31, 1921.

This section was not extended again as its purpose in assisting the public to absorb government securities had been accomplished.

Member Bank as Agent. By a clause in Section 19 of the original act, no member bank was to

act as a medium or agent of a non-member bank in applying for or receiving discounts from a Federal reserve bank under the provisions of this Act, except by permission of the Federal Reserve Board.[24]

Notes Secured by the Bonds of the War Finance Corporation. Section 13 of the War Finance Corporation Act,[25] approved April 5, 1918, authorized the Reserve Banks to discount the direct obligations of member banks, subject to the maturity limitations of the Federal Reserve Act, which were secured by bonds of the War Finance Corporation. Notes secured in this

[24] If a member bank acquires paper from a non-member with the intent of rediscounting this at its Reserve Bank and reloaning the proceeds to the non-member bank, the rediscount is not accepted. If, on the other hand, a member bank had in good faith, with no intent then of rediscounting them, acquired from a non-member bank notes which are eligible for rediscount and if such notes were held as a part of the assets of the member bank, there would seem to be no objection to the Federal Reserve Banks accepting such rediscounts, provided the officers are satisfied that the transaction is a bona fide one. (*Federal Reserve Bulletin*, 1915, p. 213.)

[25] This act may be found in the *Federal Reserve Bulletin*, 1918, pp. 300–308.

manner might be used as a basis for the issue of Federal Reserve notes. If so used the Federal Reserve Board was permitted to make a special interest charge on such notes, a charge which need not be applicable to other Federal Reserve notes. Accommodation extended by the Reserve Banks on the notes of member banks secured in this manner was to be made at a rate of interest 1% above that charged on commercial paper of corresponding maturities.[26] The discount rates, which had been established on the notes of member banks secured by bonds of the War Finance Corporation, were discontinued on April 1, 1920, as all of the outstanding bonds matured on that date.[27]

Inter-District Rediscounting. By Section 11, Clause B, of the Reserve Act the Board is empowered to require one Reserve Bank to rediscount the discounted paper of another whenever this may be necessary by reason of seasonal or unusual needs. The Board is authorized to:

> permit, or, on the affirmative vote of at least five members of the Reserve Board to require Federal reserve banks to rediscount the discounted paper of other Federal reserve banks at rates of interest to be fixed by the Federal Reserve Board.[28]

As Governor Harding stated before the Joint Commission of Agricultural Inquiry there is nothing in the Act to prevent one Reserve Bank from obtaining an advance directly from another.

[26] Governor Harding explains the reason for this higher interest charge in, *Reviving the Activities of the War Finance Corporation*, August 9, 1921, p. 6.

[27] *Seventh Annual Report of the Federal Reserve Board*, p. 63.

[28] When asked his opinion as to the advisability of giving the Board power to compel one Federal Reserve Bank to rediscount the paper of another, Mr. C. A. Conant replied, "The power of compulsion upon one reserve bank to rediscount for another, I think, is of very doubtful propriety. As a matter of fact, I do not imagine, whether it is in the law or not, that it will make much difference. The Federal Reserve Association, if it is composed of the right class of men, will cooperate with the directing boards of the Federal reserve banks, and the situation will be unusual which would lead the Federal reserve board, in the manner required in this bill, to direct a Federal reserve bank to rediscount for another bank when the bank so directed was opposed to doing it." Senate Document No. 232, 63rd Congress, 1st Session, p. 1408. Discount rates on rediscounting operations between Federal Reserve Banks are fixed by the Board. "One of the considerations which influences the Board in fixing these rates is that the borrowing bank shall not make a profit on the rediscounting operation by being permitted to borrow at a lower rate

However, the Board requested a number of years ago that they be consulted in all questions of inter-district rediscounting.[29] This the Board deemed necessary in order that they might allocate the reserves equitably, and that they might keep in close touch with banking developments in each district. Up to the present time the Board has never been compelled to force one Reserve Bank to extend funds to another. The Banks have completely coöperated with the Board.

Regulations and Rulings of the Board. While the above sections in the Federal Reserve Act and other acts define eligible paper in general terms, they do not and could not list all transactions which might be considered as commercial, industrial or agricultural. For instance, would the note of a farmer, the proceeds of which are to be used in purchasing a tractor, be considered as agricultural paper? To determine such questions, the Federal Reserve Board is empowered by Section 13 to define the character of paper made eligible for discount within the meaning of the Act. Subject then to the limitations of the Act the Board possesses full latitude in defining eligible paper. "It was a power," so H. Parker Willis declares, "of the first magnitude, practically conferring upon the Board the authority to determine the distribution of credit in the United States and in a certain sense to fix the cost of such credit. The importance of this power could not be overestimated." [30]

In drafting its regulations the Board had to decide a number of highly important questions. In the first place it had to decide whether it should define commercial paper in the sense it is commonly employed (single-name paper) or whether an attempt should be made to change this definition. Another question which had to be settled was whether rediscounted paper should be treated differently from paper purchased in the open market. Then too commercial, agricultural and industrial transactions must be defined. Also the problem had to be settled whether any distinction should be drawn between paper that arises from such transactions and paper the proceeds of which are to be employed in such transactions.

than the rate it charges its own member banks, and generally, therefore, the Board has fixed the rates on inter-reserve bank rediscounts at least as high as the discount rates of the borrowing banks then in effect."

[29] *Hearing before the Joint Commission of Agricultural Inquiry*, Part 13, pp. 273 and 276.

[30] Willis, *The Federal Reserve System*, p. 906.

As a result of its deliberations the Board came to the following general conclusions:[31]

1) the act intended and good banking requirements demanded that eligible paper should be "liquid."
2) the supply of double-name paper was entirely inadequate to be used as the basis for an elastic currency and inasmuch as the act authorized the rediscounting of both single-name and two-name paper, single-name paper must be admitted to discount.
3) the act required as nearly as possible that an absolutely uniform standard of eligibility be applied in all parts of the country.
4) the act made it mandatory to discount for member banks provided that they furnish satisfactory paper and provided that this could be done without injustice to the other members.

From time to time, the Board has issued regulations[32] in

[31] Willis, *The Federal Reserve System*, pp. 906–907.
[32] The following regulations have been issued:
1. Regulations 1–9, Series of 1914. *First Annual Report of the Federal Reserve Board*, pp. 57–63.
2. Regulations A–S, Series of 1915.

A–K	in the *Federal Reserve Bulletin*, 1915,	p. 36.
L	"	p. 78.
M	"	p. 145.
N	"	p. 148.
O	"	p. 215.
P	"	p. 216.
Q–R	"	p. 310.
S	"	p. 434.

3. Regulations A–J, Series of 1916.
Federal Reserve Bulletin, 1916, p. 530.
4. Regulations A–J, Series of 1917.
Federal Reserve Bulletin, 1917, p. 539.
5. Regulation F, Series of 1919.
Federal Reserve Bulletin, 1919, p. 438.
6. Regulations A–L, Series of 1920.
Federal Reserve Bulletin, 1920, p. 1179.
7. Regulation B, Series of 1921.
Federal Reserve Bulletin, 1921, p. 545.
8. Regulation A, Series of 1922.
Federal Reserve Bulletin, 1922, p. 433.
9. Regulations A–L, Series of 1923.
Issued July 10, 1923.

Though the eligibility of paper offered to a Reserve Bank is outlined by the provisions of the Act and by the regulations and rulings of the Board, made under the authority of the Act, the actual determination of the eligibility of paper offered is left to the separate Reserve Banks. In Letter No. 9, p. 96, entitled *Rediscounts for Member Banks*, sent out

pursuance of the provisions of the Act. In addition to promulgating these formal regulations, the officers of the Board and the counsel have, on various occasions, in response to inquiries regarding the eligibility of particular pieces of paper, delivered informal rulings which are recorded in the Federal Reserve Bulletin.

Circular Letter No. 13. On November 10, 1914, the Board issued, for the first time, in the form of a circular letter to all the Reserve Banks, suggestions governing their rediscounting operations.[33] The Banks were directed, first of all, not to rediscount any note, draft or bill, the proceeds of which had been or were to be used for mere investment [34] or speculative purposes. Double-name paper, drawn on a purchaser against an actual sale of goods afforded, the circular stated, prima-facie evidence of the character of the transaction from which it arose. This was not true of single name paper, the character of the underlying transaction was not so manifest. Each Federal Reserve Bank was therefore instructed to require member banks, before rediscounting their single name paper, to examine the financial statement of the maker with great care and to stamp on the note the statement that such paper was eligible for discount.[35]

by the Richmond Federal Reserve Bank, there are enumerated the questions which officers of Reserve Banks must decide in passing upon eligible paper:—

(a) Is the paper eligible under the law and regulations of the Board?

(b) Is the obligation good and presumably collectible at maturity?

(c) Is the applying bank entitled to the accommodation applied for in addition to what it already has?

(d) If the line of the applying bank is already full, do circumstances and conditions warrant the member bank in asking for an increase and the Reserve Bank in allowing an increase?

(e) Can the increase be granted with due regard to the claims and demands of other member banks?

[33] *First Annual Report of the Federal Reserve Board*, p. 183. The Organization Committee had spent considerable time on the problem of defining eligible paper, enlisting the aid of some of the Clearing Houses of the country in reaching its decision. See *The Federal Reserve Banker*, March 1914, pp. 9–11.

[34] Inasmuch as any funds employed in agriculture, commerce or industry are quasi-investments, particular emphasis was to be attached to the word "*mere*."

[35] The Board held that the financial statement of the borrower was essential in determining, by comparing current assets to current liabilities, whether the proceeds of a promissory note, which had been discounted by a member bank and presented by that bank for rediscount, had likely been used for liquid purposes. See Willis, *The Federal Reserve*, p. 187.

The Reserve Banks, in the second place, were cautioned to distribute evenly the maturities of the discounted paper so that approximately one-third would mature within each thirty-day period. This, so the letter read, would enable the Reserve Banks "to strengthen their hold on the general money market by collecting at maturity or by reinvesting at a higher rate a very substantial proportion of their assets. . . . It is observance of this principle that affords justification for permitting member banks to count balances with Federal reserve banks as the equivalent of cash reserves." [36] The Reserve Banks were informed, in the third place, that the rediscounted bills should be self-liquidating,[37] "should represent in every case some distinct step or stage in the productive or distributive process—the progression of goods from producer to consumer." The recommendations of the Board as contained in this circular were later embodied in a series of regulations issued to the Reserve Banks.

Circular Letter No. 13 Abandoned. The Board found it necessary to modify and amplify these regulations early in 1915 though the basic principles governing the rediscounting operations as contained in the Circular were not abandoned. The regulations were found to be unacceptable. Borrowers in country sections [38] were unable to provide the elaborate financial statements called for and many borrowers in commercial centers were unwilling. Experience proved that this Circular was in advance of the times with its "more or less stereotyped method of judging the financial responsibility of applicant banks and of their borrowers." [39]

On the 25th of January, 1915, Circular Letter No. 13 was superseded by Regulation B, Series of 1915, which modified it in the following particulars: [40]

[36] *First Annual Report of the Federal Reserve Board*, p. 183.

[37] Dr. Willis, formerly Secretary of the Federal Reserve Board, has defined self-liquidating as "the sale of goods or the consummation of the transactions for which the money has been borrowed will result in providing the means to settle the account when the time comes." *The Federal Reserve*, p. 189.

[38] The impression prevailed among country bankers that little, if any, of the paper they held would be eligible and that "onerous requirements with regard to borrowers' statements would be insisted upon." See *Second Annual Report of the Federal Reserve Board*, p. 160.

[39] Willis, *The New Banking System*, p. 595.

[40] Conway, *The Influence of the Federal Reserve Act upon Commercial Borrowing*, p. 232.

(a) In case the paper offered by a member bank for rediscount did not exceed $5000 in amount or 10% of the capital and surplus of the member bank, financial statements covering the names to the paper would not have to be filed. The member bank was simply to certify that the paper was eligible.
(b) In case the paper of the same borrower was presented for rediscount at more than one Federal Reserve Bank, a financial statement covering his condition would have to be filed at only one of the Regional Banks.

Definition of a Note, Draft, or Bill Eligible for Rediscount. The most recent series of regulations governing rediscounts was issued by the Board on July 10, 1923.[41] After reviewing the statutory provisions in the Act, the Board defined a note, draft or bill of exchange eligible for rediscount as one,

1) that has a definite maturity at the time of discount of not more than ninety days, exclusive of days of grace; except that if drawn or issued for an agricultural purpose or based on live stock, it may have a maturity at the time of discount of not more than nine months, exclusive of days of grace, and except that certain bills of exchange payable at sight are eligible even though they have no maturity date.
2) that has been issued or drawn for an agricultural, industrial, or commercial purpose, or the proceeds have been used or are to be used for such a purpose, or it is a note, draft, or bill of exchange of a factor issued as such making advances exclusively to producers of staple agricultural products in their raw state.
3) that it was not issued for carrying or trading in stocks, bonds, or other investment securities, except bonds or notes of the Government of the United States.
4) that the aggregate of notes, drafts, and bills bearing the signature or indorsement of any one borrower, whether a person, company, firm, or corporation, discounted for any one member bank, whether state or national, shall at no time exceed 10 per cent of the unimpaired capital and surplus of such bank; but this restriction shall not apply to the discount of bills of exchange drawn in good faith against actually existing values.

[41] In its *Second Annual Report* (p. 10) the Board stated that "the regulations of the Board have been prepared with a view to the necessities of practically every part of the country, including both agricultural and city constituencies."

5) that it is indorsed by a member bank.
6) that it conforms to all applicable provisions of the regulation.

Exercising its statutory rights to define the character of a note, draft, or bill of exchange eligible for discount at a Reserve Bank the Board determined that:

1) it must be a negotiable note, draft, or bill of exchange which has been issued or drawn, or the proceeds of which have been used or are to be used in the first instance, in producing, purchasing, carrying, or marketing goods [42] in one or more of the steps of the process of production, manufacture, or distribution, or for the purpose of carrying or trading in bonds or notes of the United States, and the name of a party to such transaction must appear upon it as maker, acceptor or indorser.
2) it must not be a note, draft, or bill of exchange the proceeds of which have been or are to be advanced or loaned to some other borrower. This does not apply to the paper of coöperative marketing associations or to factors' paper.
3) it must not be a note, draft, or bill of exchange the proceeds of which have been used or are to be used for permanent or fixed investments of any kind, such as land, buildings, or machinery, or for any other capital purpose.
4) it must not be a note, draft, or bill of exchange the proceeds of which have been used or are to be used for investments of a purely speculative character.
5) it may be secured by the pledge of goods or collateral of any nature, including paper which is ineligible for discount provided it (the note, draft, or bill of exchange) is otherwise eligible.

The regulations further require that a member bank must accompany its applications for rediscounts with a certificate stating that the notes, drafts or bills presented for rediscount were issued for such a purpose as to render them eligible. Member state banks must certify that the borrower is not liable, and will not be permitted to become liable during the time his paper is held by the Federal Reserve Bank, to such bank for borrowed money to an amount greater than that which could be borrowed lawfully from such state bank or trust company under the terms of Section 5200 of the United States Revised Statutes, as amended, were it a national banking association.

[42] The word "goods" is construed to mean goods, wares, merchandise and agricultural products. *Federal Reserve Bulletin*, 1922, p. 434.

Rediscounting of Promissory Notes. A promissory note is defined by the regulations as

> an unconditional promise, in writing, signed by the maker, to pay, in the United States, at a fixed or determinable future time, a sum certain in dollars to order or to bearer.

In rediscounting promissory notes a member bank must,

> a) certify whether the note offered for rediscount has been discounted for a depositor other than a bank or for a non-depositor and, if discounted for a bank, whether for a member or non-member bank.
> b) certify whether a financial statement of the borrower is on file or not. A recent financial statement must be on file with the discounting member bank in all cases unless:
>
> 1) the note is secured by a warehouse, terminal, or other similar receipt covering goods in storage, by a valid prior lien on live stock which is being marketed or fattened for market, or by bonds or notes of the United States.
>
> 2) the aggregate obligations of the borrower which have been offered for rediscount at the Reserve Bank is less than a sum equal to 10% of the paid-in capital of the member bank and is less than $5000.
>
> A Federal Reserve Bank may in all cases, at its own discretion, require the financial statement of the borrower to be filed. The statements which are filed must show a reasonable excess of quick assets over current liabilities.

The Rediscounting of Drafts, Bills of Exchange and Trade Acceptances. The regulations define a draft or bill of exchange as,

> an unconditional order in writing, addressed by one person to another, signed by the person giving it, requiring the person to whom it is addressed to pay in the United States, at a fixed or determinable future time, a sum certain in dollars to the order of a specified person;

and a trade acceptance is defined as,

> a draft or bill of exchange, drawn by the seller on the purchaser of goods sold, and accepted by such purchaser.

Before rediscounting drafts or bills of exchange a Federal Reserve Bank may take such steps as it deems necessary to satisfy itself as to their eligibility, and may require a recent financial statement of one or more parties to the instrument. The draft, bill, or trade acceptance should be so drawn as to evidence the character of the underlying transaction, but if not so drawn, evidence of eligibility may consist of a stamp affixed by the acceptor or drawer in a form satisfactory to the Federal Reserve Bank.

Agricultural Paper. The Board has defined agricultural paper as,

> a negotiable note, draft, or bill of exchange issued or drawn, or the proceeds of which have been or are to be used, for agricultural purposes, including the production of agricultural products, the marketing of agricultural products by the growers thereof, or the carrying of agricultural products by the growers thereof pending orderly marketing, and the breeding, raising, fattening, or marketing of live stock, and which has a maturity at the time of discount of not more than nine months, exclusive of days of grace.

and paper of coöperative marketing associations as:

> Notes, drafts, bills of exchange, or acceptances issued or drawn by coöperative marketing associations composed of producers of agricultural products are deemed to have been issued or drawn for an agricultural purpose, if the proceeds thereof have been or are to be—
>
> 1) advanced by such association to any member thereof for an agricultural purpose, or
>
> 2) used by such association in making payments to any members thereof on account of agricultural products delivered by such members to the association, or
>
> 3) used by such association to meet expenditures incurred or to be incurred by the association in connection with the grading, processing, packing, preparation for market, or marketing of any agricultural product handled by such association for any of its members.
>
> 4) the paper of cooperative marketing associations which have been used or are to be used to defray the expenses of organizing such associations or are to be used for any permanent or fixed investment are not eligible.

Discounts for Federal Intermediate Credit Banks:

A Reserve Bank may discount agricultural paper for any Federal Intermediate Credit Bank provided that such paper does not bear the indorsement of a non-member state bank or trust company which is eligible for membership in the Reserve System. In discounting such paper each Reserve Bank must give preference to the demands of its own member banks and shall have due regard to their probable future needs. A Reserve Bank is not to discount paper for any Federal Intermediate Credit Bank when its reserve percentage amounts to less than 50 per cent. The aggregate amount of paper discounted by all the Reserve Banks for any one Federal Intermediate Credit Bank shall at no time exceed an amount equal to the paid-up and unimpaired capital and surplus of such Federal Intermediate Credit Bank.

Limitations on the amount of agricultural paper discounted.

The Board prescribes no limitation on the aggregate amount of notes, drafts, bills of exchange, and acceptances with maturities in excess of three months, but not exceeding six months, exclusive of days of grace, which may be discounted by any Federal Reserve Bank; but the aggregate amount of notes, drafts, bills of exchange, and acceptances with maturities in excess of six months, but not exceeding nine months, which may be discounted by any Federal Reserve Bank shall not exceed 10 per cent of its total assets.

Sight drafts secured by bills of lading.

A Reserve Bank may discount for any of its members bills of exchange payable at sight or demand which

1) are drawn to finance the domestic shipment of nonperishable, readily marketable, staple agricultural products, and

2) are secured by bills of lading or other shipping documents conveying or securing title to such staples.

All such bills shall be forwarded promptly for payment and demand for payment made promptly, unless the drawer instructs that they be held until arrival of car, in which event they must be presented for payment within a reasonable time after notice of arrival of such staples at their destination has been received. In no event shall any such bill be held by or for the account of a Federal Reserve Bank for a period in excess of ninety days. In discounting such bills Reserve Banks may compute the interest to be deducted on the basis of the estimated life of each bill and adjust the amount thus deducted after payment of such bills to conform to the actual life thereof.

Factors' paper.

> Notes, drafts, and bills of exchange of factors issued as such for the purpose of making advances exclusively to producers of staple agricultural products in their raw state are eligible for discount with maturities not in excess of ninety days, exclusive of days of grace.

Advances. In furtherance of the provisions of the Act, the Federal Reserve Board has ruled that,

> Any Federal reserve bank may make advances to its member banks on their promissory notes for a period not exceeding fifteen days, provided that they are secured by notes, drafts, bills of exchange, or bankers' acceptances which are eligible for discount or purchase by Federal Reserve Banks, or by the deposit or pledge of bonds or notes of the United States, or bonds of the War Finance Corporation.[43]

A Reserve Bank is permitted to renew the fifteen-day notes of its member banks if properly secured, though a Reserve Bank must not obligate itself in advance to make any such renewal.[44] The Board has ruled, however, that such renewals should be the exception rather than the rule.[45] It has also been ruled by the counsel that the Federal Reserve Board may approve a preferential rate on the notes of member banks secured by government war obligations. In case such obligations are not actually owned by the member bank, a Reserve Bank may, in the exercise of its own discretion, refuse to make an advance on its note.[46]

THE ACCEPTANCE PROVISIONS OF THE FEDERAL RESERVE ACT

For many years it had been the desire of students of banking that a discount market be developed in New York comparable to the discount market in London and equally capable of financing foreign trade.[47] The growth of such a market was contingent on a number of factors. Permission had to be given national banks to accept time bills of exchange, since various courts had ruled

[43] Regulation A, Series of 1923.

[44] Opinion of counsel, *Federal Reserve Bulletin*, October, 1917, p. 765.

[45] Ruling of the Federal Reserve Board, *Federal Reserve Bulletin*, 1917, p. 879.

[46] Opinion of Counsel, *Federal Reserve Bulletin*, 1920, p. 163. As farm loan bonds are not obligations of the United States they are ineligible as collateral for the promissory notes of member banks.

[47] The right to accept drafts was conferred on New York state banking institutions by the act of April 16, 1914.

that, under the National Banking Act, they were without authority to do this. But the mere possession of this power on the part of national banks would not in itself be a surety that their acceptance business would become large. American banks would do little accepting, unless they played an important rôle in the short-term financing of international trade and unless they became the media for the exportation of capital from America to foreign countries. It had been found by experience that the foreign branches of English banks or of English-controlled banks had been a very important factor in contributing to London's preëminent position as a financier of the trade of the world. Profiting by this example, the Federal Reserve Act authorized national banks with a capital and surplus of $1,000,000 or more to establish branches abroad. This provision was enlarged by an act approved on September 7, 1916, permitting such national banks to invest an amount not exceeding 10% of their paid-in capital stock and surplus in the stock of one or more banks or corporations, chartered or incorporated under the laws of the United States or of any State thereof, and principally engaged in international or foreign banking. It was hoped that the foreign branches of American banks or the overseas banks controlled by American banks would become the media through which capital might be exported from America to foreign countries, through which the short-term financing of foreign trade by American banks might develop and through which American business men could secure accurate foreign credit information. As the keystone to the entire structure there was needed a central reserve rediscounting bank which would stand ready at all times to rediscount, at a price, eligible acceptances held in the portfolios of member banks. Acceptances as an investment must be made as liquid as the call loan, if banks were to invest their surplus funds in them for short periods of time.

Acceptances Arising from Foreign Trade Transactions. By the terms of the original Federal Reserve Act (Section 13) a member bank was permitted to

> accept drafts or bills of exchange drawn upon it and growing out of transactions involving the importation or exportation of goods having not more than six months sight to run; but no bank shall accept such bills to an amount equal at any time in the aggregate to more than one-half its paid-up capital stock and surplus.[48]

[48] The words "based on imports or exports" was defined to include shipments between:

The Federal Reserve Banks were authorized to rediscount such acceptances, if maturing within three months and if endorsed by at least one member bank, to an amount not to exceed one-half of the paid-up capital stock and surplus of the bank for which the rediscounts were made.

Acceptances Permitted to 100 Per Centum of the Accepting Bank's Capital and Surplus. By an act approved on March 3, 1915,[49] this provision was amended so as to permit member banks, upon receiving the authorization of the Federal Reserve Board, to accept bills of exchange arising from the importation or exportation of goods [50] to an amount not to exceed 100% of their capital and surplus. Member banks still retained the right to accept without special permission from the Board, such drafts to an amount not to exceed 50% of their paid-up capital stock and surplus. Should a member bank desire, however, to accept time bills of exchange to a larger amount, it must secure authorization from the Board.

The acceptance powers of member banks were greatly broadened by an act approved, September 7, 1916,[51] further amending Section 13. The amendment follows:

> Any Federal reserve bank may discount acceptances of the kinds hereinafter described, which have a maturity at the time of discount of not more than three months' sight, exclusive of days of grace, and which are indorsed by at least one member bank.
>
> Any member bank may accept drafts or bills of exchange drawn upon it having not more than six months' sight to run, exclusive of

a) the United States and any foreign country.

b) any two or more foreign countries.

c) continental United States and Porto Rico, the Philippines or the Canal Zone—but *excluded* shipments between the continental United States and Hawaii or between any two parts of the United States. (*Federal Reserve Bulletin*, 1915, p. 98.)

[49] This amendment may be found in the *Federal Reserve Bulletin*, 1915, p. 152.

[50] The intent to import or export is not a sufficient basis for the acceptance of such drafts by a member bank, the person for whom the draft is accepted must have a bona-fide contract for the shipment of goods. (*Federal Reserve Bulletin*, 1918, pp. 435 and 976; 1920, p. 66.)

The Board has ruled that member banks may issue letters of credit and for more than six months provided that no individual acceptance exceeds that period and provided that no holder of an acceptance is obligated to renew the same at maturity. (*Federal Reserve Bulletin*, 1916, p. 269.)

[51] These amendments may be found in the *Third Annual Report of the Federal Reserve Board*, 1916, pp. 134–139.

days of grace, which grow out of transactions involving the importation or exportation of goods; or which grow out of transactions involving the domestic shipment of goods provided shipping documents conveying or securing title are attached at the time of acceptance; or which are secured at the time of acceptance by a warehouse receipt or other such document conveying or securing title covering readily marketable staples.[52] No member bank shall accept, whether in a foreign or domestic transaction, for any one person, company, firm, or corporation to an amount equal at any time in the aggregate to more than ten per centum of its paid-up and unimpaired capital stock and surplus, unless the bank is secured either by attached documents or by some other actual security growing out of the same transaction as the acceptance; and no bank shall accept such bills to an amount equal at any time in the aggregate to more than one-half of its paid-up and unimpaired capital stock and surplus.

Any member bank may accept drafts or bills of exchange drawn upon it having not more than three months' sight to run, exclusive of days of grace, drawn under regulations to be prescribed by the Federal Reserve Board by banks or bankers in foreign countries or dependencies or insular possessions of the United States for the purpose of furnishing dollar exchange as required by the usages of trade in the respective countries, dependencies, or insular possessions. Such drafts or bills may be acquired by Federal reserve banks in such amounts and subjects to such regulations, restrictions, and limitations as may be prescribed by the Federal Reserve Board: *Provided, however,* That no member bank shall accept such drafts or bills of exchange referred to in this paragraph for any one bank to an amount exceeding in the aggregate ten per centum of the paid-up and unimpaired capital and surplus of the accepting bank unless the draft or bill of exchange is accompanied by documents conveying or securing title or by some other adequate security: *Provided further,* That no member bank shall

[52] A readily marketable staple has been defined by the Board as one whose price is easily ascertained and one which can be realized upon by sale at any time. *Federal Reserve Bulletin*, 1922, p. 435.

There would seem to be no economic necessity for domestic bankers' acceptances. Dr. Willis, relative to the provisions in the original Federal Reserve Act limiting the use of the acceptance to foreign trade, has written: "This limitation is imposed in order to avoid an undue development of the acceptance business on the part of banks which perhaps would not be of the highest degree of solvency, or might have embarked upon an acceptance business to too great an extent in proportion to their resources." Willis, *The Federal Reserve*, pp. 181–182.

accept such drafts or bills in an amount exceeding at any time the aggregate of one-half of its paid-up and unimpaired capital and surplus.[53]

In this act there was inadvertently omitted the reënactment of the authority vested in the Board by the act of March 3, 1915, to authorize member banks to accept bills of exchange based on importations and exportations of goods to an amount not to exceed 100% of their capital and surplus. This provision was restored by an amendment approved June 21, 1917.[54]

[53] The purpose of this clause was to enable American banks to provide dollar exchange in countries, particularly one-crop countries, where the check is not the current means of remittance in payment of foreign imports, but where the three months' bankers' draft is generally used for that purpose. In some countries, where mail connections are irregular, where the foreign exchange market is a limited one, and where it would be difficult for the drawing banker to be confident that he could find cover for checks drawn by him to forward by the same mail, it is the customary practice for the bankers there to sell three months' drafts drawn on banks, located in some commercially important nation, to importers. These drafts are later liquidated by commodity exports. This practice is especially prevalent in one-crop nations. Thus bankers in Australia are in the habit of selling long bankers' drafts, instead of checks, to importers in Australia as a means of remittance, the intent being that these drafts are liquidated later by shipments of wool and meat.

Any member bank desiring to accept drafts drawn by banks or bankers in foreign countries or dependencies or insular possessions of the United States for the purpose of furnishing dollar exchange must first make application to the Federal Reserve Board setting forth the usages of trade in the respective countries. If the Federal Reserve Board should determine that the usages of trade in such countries were such as to warrant the granting of the application, the names of those countries in which banks or bankers are authorized to draw on member banks will be published in the Federal Reserve Bulletin. The Board may on ninety days' notice modify or revoke its approval either as to any particular member banks or as to any foreign country in which it has authorized banks or bankers to draw on member banks for the purpose of furnishing dollar exchange.

Member banks are permitted now to accept drafts drawn upon them for the purpose of furnishing dollar exchange by banks or bankers in the following named countries: Argentina, Australia, New Zealand, Bolivia, Brazil, British Guiana, British Honduras, Chile, Colombia, Costa Rica, Cuba, Dutch East Indies, Dutch Guiana, Ecuador, French Guiana, French West Indies, Guatemala, Honduras, Nicaragua, Panama, Paraguay, Peru, Porto Rico, San Salvador, Santo Domingo, Trinidad, Uruguay, and Venezuela. (See *Federal Reserve Bulletin;* 1916, p. 665; 1918, p. 119; 1920, pp. 835 & 1175; 1921, p. 188.)

[54] Under the regulations of the Board any member bank having an unimpaired surplus equal to 20% of its paid-up capital, which desires to

A summary of the provisions governing the acceptance of bills of exchange and drafts by banks members of the Federal Reserve System follows:

SUMMARY OF ACCEPTANCE PROVISIONS IN THE FEDERAL RESERVE ACT [55]

			Rate per cent. of paid-up unimpaired capital and surplus accepted for one interest	*Rate per cent. of paid-up unimpaired capital and surplus which may be accepted in the aggregate*	*Maturity of acceptances exclusive of days of grace*
Acceptances	a. Foreign transactions	Unsecured	10%		
	b. Domestic transactions	Secured by attached documents or by some other actual security growing out of the same transaction as the acceptance	No limit	50%—on approval of Board 100% but aggregate amount of acceptances arising from domestic transactions not to exceed 50%	6 months
	c. Dollar exchange		10% unless bill of exchange accompanied by documents conveying or securing title or by some other adequate security	50%—distinct from limitation above	3 months

accept drafts or bills of exchange up to 100% of its paid-up and unimpaired capital stock and surplus, may file an application for that purpose with the Federal Reserve Board. Such application must be forwarded through the Federal Reserve Bank of the district in which the applying bank is located.

The Federal Reserve Bank shall report to the Federal Reserve Board upon the standing of the applying bank, stating whether the banking and business conditions prevailing in its district warrant the granting of such application.

The approval of any such application may be rescinded upon ninety days' notice to the bank affected. (*Federal Reserve Bulletin*, Regulation C, Series of 1920, p. 1182.)

When a bank has been granted permission to accept in an amount not exceeding in the aggregate one hundred per centum of its paid-up capital and surplus, it is not necessary for such bank to obtain additional authority from the Board each time it increases its surplus. (*Federal Reserve Bulletin*, 1919, p. 143.)

[55] A table appearing in *Banking and Business*, by Willis and Edwards, p. 149, suggested this one.

These various amendments have had the effect of loosening up greatly the acceptance provisions of the original Federal Reserve Act. Originally restricted to transactions involving the importation and exportation of goods, the provisions of the Act have been broadened so as to permit the use of the acceptance in domestic transactions and for the purpose of creating dollar exchange. Originally a member bank was limited in the acceptance of bills of exchange to an amount not to exceed one-half of its paid-up unimpaired capital and surplus, now all member banks may accept up to 100% and after receiving special permission from the Federal Reserve Board up to 150%. The acceptance provisions in the Federal Reserve Act as it stands now are infinitely more lax than those in the Aldrich Plan, or those in the Hitchcock or Owen Bills. The laxity of the provisions in the latter, it will be remembered, drew the scathing denunciation of Carter Glass. Permitting member banks to accept such a large amount of acceptances relative to their capital and surplus and for such a variety of transactions would tend, and in fact has tended, in a nation where bankers unfortunately are not well versed in acceptance theory and practice, toward abuses in their use, toward inflationary practices. Strange as it may seem the Federal Reserve Board recommended all of these changes.[56] Could it have been that they did not appreciate the inflationary tendencies involved in their adoption?

The Rediscounting of Acceptances. The most recent series of regulations issued by the Board governing the rediscounting of the acceptances of member banks were transmitted to the Reserve Banks on July 10, 1923.

Regulations A, Article B, Series of 1922. A banker's acceptance is defined in these regulations as,

> a draft or bill of exchange, whether payable in the United States or abroad and whether payable in dollars or some other money,[57] of which the acceptor is a bank or trust company, or a firm, person, company, or corporation engaged generally in the business of granting bankers' acceptance credits.[58]

[56] *Second Annual Report of the Federal Reserve Board*, p. 22.

[57] Bankers' acceptances drawn in foreign currencies may be used as the basis for the issuance of Federal Reserve Notes. (Letter to author from Edmund Platt, Vice-Governor of the Federal Reserve Board.)

[58] A bill of exchange discounted before acceptance must be accompanied by shipping documents or other papers securing title to the goods in order to be considered as "drawn against existing value." (*Federal Reserve Bulletin*, 1917, p. 195.)

Bankers' Acceptances Eligible for Rediscount. The Federal Reserve Banks are permitted to rediscount bankers' acceptances which bear the indorsement of a member bank and which have a maturity at time of discount of not more than ninety days' sight, exclusive of days of grace, except that acceptances drawn for agricultural purposes and secured at the time of the acceptance by warehouse receipts or other such documents conveying or securing title covering readily marketable staples may be discounted with maturities at the time of discount of not more than six months' sight, exclusive of days of grace. Acceptances which are discounted must have been drawn under a credit opened for the purpose of conducting or settling accounts resulting from a transaction or transactions involving any one of the following: [59]

a) the shipment of goods between the United States and any foreign country, or between the United States and any of its dependencies or insular possessions, or between foreign countries, or between the insular possessions of the United States and foreign countries.

b) the shipment of goods within the United States, provided shipping documents conveying security title are attached at the time of acceptance, or

c) the storage of readily marketable staples, provided that the bill is secured at the time of acceptance by a warehouse, terminal, or other similar receipt, conveying security title to such staples, issued by a party independent of the customer, and provided further that the acceptor remains secured throughout the life of the acceptance. In the event that the goods must be withdrawn from storage prior to the maturity of the acceptance or the retirement of the credit, a trust receipt or other similar document covering the goods may be substituted in lieu of the original document, provided that such substitution is conditioned upon a reasonably prompt liquidation of the credit.

The regulations further stipulated that the acceptances for any one customer in excess of 10% [60] of the capital and surplus

[59] Whether the accepting member bank is located in the same district as the rediscounting Federal Reserve Bank or not.

[60] Should an accepting member bank acquire its own acceptance from the customer or from some other party, or should the customer fail to furnish funds with which to meet the acceptance at maturity, then such acceptance liability is subject to the loan limitations of Section 5200 of the Revised Statutes. (*Federal Reserve Bulletin*; 1916, pp. 227 and 680; 1917, p. 691.)

of the accepting bank must remain actually secured throughout the life of the acceptance. In the case of the acceptances of member banks this security must consist of shipping documents, warehouse receipts, or other such documents, or some other actual security growing out of the same transaction as the acceptance, such as documentary drafts, trade acceptances, terminal receipts, or trust receipts, which have been issued under such circumstances, and which cover goods of such a character, as to insure at all times a continuance of an effective and lawful lien in favor of the accepting bank. Trust receipts are not to be considered such actual security if they permit the customer to have access to or control over the goods.[61]

Dollar Exchange. Federal Reserve Banks are permitted further to rediscount any bill drawn by a bank or banker in a foreign country or dependency or insular possession of the United States for the purpose of furnishing dollar exchange, provided that such drafts have a maturity at time of discount of not more than three months exclusive of days of grace.

Acceptances Not to Run for a Longer Period Than the Underlying Transaction. Although the Federal Reserve Banks may legally rediscount acceptances having a maturity at time of discount of six months, exclusive of days of grace, the regulations advise them not to rediscount any acceptances, the maturity of which is in excess of the usual or customary credit period required to finance the underlying transaction. Especially was this to be emphasized in the rediscounting of acceptances secured by warehouse receipts, whose sole purpose should be to permit the temporary holding of readily marketable staples in storage pending a reasonably prompt sale, shipment, or distribution.[62]

A Federal Reserve Bank must satisfy itself, either by reference to the acceptance itself, or otherwise, that the acceptance is eligible for rediscount under the terms of the law and the regulations issued by the Board. The bill itself should be so drawn as to evidence the character of the underlying transaction, but if not so drawn evidence of eligibility may consist of a stamp or

[61] Shipping documents, warehouse receipts, or trust receipts which do not enable the borrower to obtain the goods for his own use, constitute actual security growing out of the same transaction.

[62] Any draft drawn to carry goods for speculative purposes or for any indefinite period of time without the purpose to sell, ship, or manufacture within a reasonable time, should not be considered eligible for acceptance under the provisions of section 13. (*Federal Reserve Bulletin*, 1919, p. 858.)

certificate affixed by the acceptor in a form satisfactory to the Federal Reserve Bank.

Open-Market Powers of the Reserve Banks. The Reserve Banks have been invested by the Act with extensive powers in the open market.[63] The purpose of such privileges, as has been mentioned before, is to permit the Regional Banks to bring down interest rates in sections where they seem abnormally high; to make their own discount rates effective; to control international movements of gold; to rectify the exchanges; to assist in the financing of America's foreign trade, in the development of a discount market in New York and in the use of bankers' acceptances.

Section 14, Open-market Powers. The provisions of the original act follow:

> Any Federal reserve bank may, under rules and regulations prescribed by the Federal reserve board, purchase and sell in the open market, at home or abroad, either from or to domestic or foreign banks, firms, corporations, or individuals, cable transfers and bankers' acceptances and bills of exchange of the kinds and maturities by this act made eligible for rediscount, with or without the indorsement of a member bank.[64]

Every Federal Reserve Bank shall have power:

> To deal in gold coin and bullion at home or abroad, to make loans thereon, exchange Federal reserve notes for gold, gold coin, or gold certificates, and to contract for loans of gold coin or bullion, giving therefor, when necessary, acceptable security, including the hypothecation of United States bonds or other securities which Federal reserve banks are authorized to hold:
>
> To buy and sell, at home or abroad, bonds and notes of the United States, and bills, notes, revenue bonds, and warrants with a maturity from date of purchase of not exceeding six months, issued in anticipation of the collection of taxes or in anticipation of the receipt of assured revenues by any State, county, district, political subdivision, or municipality in the continental

[63] The decision as to whether a Reserve Bank shall engage in open-market transactions rests entirely with itself and not with the Board (*Federal Reserve Bulletin*, 1917, p. 457).

[64] Federal Reserve Banks may use their own discretion in establishing differentials between the acceptances of member and non-member banks. (*Federal Reserve Bulletin*, 1917, p. 28.)

United States, including irrigation, drainage and reclamation districts, such purchases to be made in accordance with rules and regulations prescribed by the Federal reserve board:

To purchase from member banks and to sell, with or without its endorsement, bills of exchange arising out of commercial transactions, as hereinbefore defined:

To establish accounts with other Federal reserve banks for exchange purposes and, with the consent of the Federal reserve board, to open and maintain banking accounts in foreign countries, appoint correspondents, and establish agencies in such countries wheresoever it may deem best for the purpose of purchasing, selling, and collecting bills of exchange, and to buy and sell with or without its indorsement, through such correspondents or agencies, bills of exchange arising out of actual commercial transactions which have not more than ninety days to run and which bear the signature of two or more responsible parties.[65]

Amendments to Section 14. This last clause was amended by the act of September 7, 1916, which authorized the Reserve Banks, with the consent of the Federal Reserve Board, to open and maintain banking accounts for its foreign correspondents or agencies. At the same time the phrase "exclusive of days of grace" was inserted following the statement that the bills of exchange bought and sold by a Reserve Bank through its foreign correspondents and agencies were to mature within ninety days. By an act approved on June 21, 1917, this same clause was amended a second time. The Board was given power to compel the Reserve Banks, whenever it should so desire, to open and maintain accounts in foreign countries. Further, whenever such an account had been opened by a Reserve Bank, with the consent of or by direction of the Board, any other Reserve Bank was to be allowed, with the consent and approval of the Board, to carry on or to conduct through the Reserve Bank opening such an account any transaction authorized by this section, under rules and regulations to be prescribed by the Board.

By the Agricultural Credits Act the following clause (f) was added to Section 14 which permits the Reserve Banks:

[65] The Reserve Banks are without authority to purchase promissory notes in the open-market (*Federal Reserve Bulletin*, 1915, pp. 347 and 365). Dr. Willis claims that this power was denied them as it was felt that "they would not be in as good position to judge the paper as the member banks themselves, so that they might from time to time take the paper which was not thoroughly satisfactory." *The Federal Reserve*, p. 182.

To purchase and sell in the open market, either from or to domestic banks, firms, corporations, or individuals, acceptances of Federal Intermediate Credit Banks and of National Agricultural Credit Corporations, whenever the Federal Reserve Board shall declare that the public interest so requires.

Regulation B, Series of 1923. To be eligible for purchase by a Reserve Bank, the regulations prescribe that bills of exchange or acceptances must have been accepted by the drawee prior to such purchase, unless accompanied or secured by shipping documents, by warehouse, terminal or other similar receipt conveying security title or unless they bear a satisfactory banking indorsement. Further, they must conform to all the requirements governing bills of exchange which are presented for rediscount, except that,

a) a banker's acceptance growing out of a transaction involving the importation or exportation of goods may be purchased if it has a maturity not in excess of six months exclusive of days of grace.[66]
b) a banker's acceptance growing out of a transaction involving the storage within the United States of goods actually under con-

[66] It would appear from a reading of the Act that bankers' acceptances to be eligible for purchase by a Reserve Bank would have to mature within three months. The first clause of Section 14 reads, "Any Federal reserve bank may, under rules and regulations prescribed by the Federal Reserve Board, purchase and sell in the open market, at home or abroad, either from or to domestic or foreign banks, firms, corporations, or individuals, cable transfers and bankers' acceptances and bills of exchange of the kinds and maturities by this Act made eligible for rediscount, with or without the indorsement of a member bank." Turning to Section 13, we find that to be eligible for rediscount a banker's acceptance aside from those arising from agricultural transactions must have a maturity of three months. How is it then that the Board in its regulations allow the Reserve Banks to purchase bankers' acceptances having a maturity of six months? Here's the explanation as received by the author from a member of the Board:

"The question of whether the Board's regulation authorizing the purchase of six months' acceptances is in conflict with the terms of the Federal Reserve Act depends upon whether or not the phrase 'of the kinds and maturities by this act made eligible for rediscount' refers both to bankers' acceptances and to bills of exchange or refers only to bills of exchange. It cannot, of course, refer to cable transfers, because cable transfers are not eligible for rediscount under any circumstances. The phrase might, however, qualify both bankers' acceptances and bills of exchange or might qualify only bills of exchange. The Federal Reserve Board has always interpreted it as applying only to bills of exchange, and in its regulations

> tract for sale and not yet delivered or paid for may be purchased, provided that the acceptor is secured by the pledge of such goods; and provided further that the acceptance conforms in other respects to the relative regulations governing the rediscounting of such a banker's acceptance.[67]

of the Series of 1915, 1916, 1917 and 1920, it has authorized the purchase in the open market by Federal reserve banks of acceptances growing out of the domestic storage of goods, although the only acceptances eligible for rediscount as growing out of domestic storage transactions are those growing out of the storage of *readily marketable staples*. The term 'goods' is, of course, more inclusive than the term 'readily marketable staples.' Consequently, the Board's Regulation B, Series of 1921, making eligible for purchase in the open market, subject to certain conditions, acceptances with maturities not in excess of six months which grow out of foreign transactions, was not predicated upon any new interpretation of the law.

"Looking only at the language of this particular provision of the Federal Reserve Act, it is not clear whether the phrase 'of the kinds and maturities by this act made eligible for rediscount' qualifies both bankers' acceptances and bills of exchange or qualifies only bills of exchange, but as heretofore indicated the latter interpretation now has the sanction of established usage, and this would, I think, have great weight with any court which had to pass upon the question. Furthermore, the legislative history of the Federal Reserve Act indicates that the Board's interpretation of the provision is the correct one. The corresponding paragraph of the bill as it first passed the House of Representatives provided 'That any Federal reserve bank may, under rules and regulations prescribed by the Federal Reserve Board, purchase and sell in the open market, . . . prime bankers' bills, and bills of exchange of the kinds and maturities by this Act made eligible for rediscount and cable transfers.' The words 'and bills of exchange of the kinds and maturities by this Act made eligible for rediscount, thus constituted one separate and complete clause with a comma at the beginning and at the end, and it is quite clear that the term 'prime bankers' bills' was not intended to be qualified by the words 'of the kinds and maturities by this Act, made eligible for rediscount.' There is nothing to indicate that the subsequent amendment which the Senate made in the phraseology of the provision was intended to give any broader application to the phrase 'of the kinds and maturities by this Act made eligible for rediscount,' and the fact that the provision as thus amended is at least ambiguous is indicative of the absence of such an intent."

In issuing Regulation B, Series of 1921, the Board stated that two considerations had led them to permit Reserve Banks to purchase bankers' acceptances with maturities not in excess of six months: (1) the desire to widen the acceptance market by meeting the wants of saving banks and similar purchasers of bankers' acceptances who were then deterred from investing in acceptances of longer than three months' maturity, because of the lack of authority of Reserve Banks to purchase longer maturities up to six months; and (2) to provide more ample facilities for financing

Further, a bill of exchange unless indorsed by a member bank is not eligible for purchase until a satisfactory statement has been furnished of the financial condition of one or more of the parties thereto. A banker's acceptance, unless accepted or indorsed by a member bank,[68] is not eligible for purchase until the acceptor has furnished a satisfactory statement of his financial condition in a form to be approved by the Board, and has agreed in writing to inform the Reserve Bank upon request concerning the transaction underlying the acceptance.

The Purchase of Government Bonds. On December 18, 1914,[69] the Reserve Banks were authorized by the Board to purchase government bonds within such limits of prudence as they saw fit. The Board has never restricted purchases of government securities by Reserve Banks. They exercise their own discretion as to the amount bought.

The Purchase of Municipal Warrants. Though the Reserve Banks are not limited in purchasing government securities, they are circumscribed in the buying of municipal warrants. Beginning with December 23, 1914, when copies of a tentative set of regulations were transmitted to the Reserve Banks, the Board has from time to time issued regulations governing in detail the operations of the Reserve Banks in this particular.[70] An abstract of the chief provisions of the last one follows:

export and import trade with countries where either normal or abnormal conditions indicated the desirability of rendering assistance by making acceptances of maturities not exceeding six months eligible for purchase. (*Federal Reserve Bulletin*, 1921, p. 545.)

[67] At first in purchasing acceptances the Reserve Bank in question had to secure permission from the Board to buy between certain minimum and maximum rates. As it is now the Reserve Banks propose certain minimum rates below which they will not buy and which are approved by the Board.

[68] The Board has ruled that the indorsement of a banker's acceptance by the accepting bank adds no strength to the instrument, since the accepting bank is already primarily liable as acceptor. The Reserve Banks were instructed that all purchases direct from the accepting bank of bankers' acceptances bearing no member bank indorsement, other than that of the accepting bank, should be made at the prevailing rate for commercial paper rather than at the preferential rate applicable to bankers' acceptances as such.

[69] *First Annual Report of the Federal Reserve Board*, p. 16.

[70] *Ibid.*, p. 16. Beside the tentative rulings issued by the Board on December 23, 1914, the following regulations have been issued, governing purchases of municipal warrants:

I. Any Reserve Bank may purchase warrants [71] issued by a municipality in anticipation of the collection of taxes or in anticipation of the receipt of assured revenues, provided,

a) they are the general obligations of the entire municipality.
b) they are issued in anticipation of taxes or revenues which are due and payable on or before the date of the maturity of such warrants, but the Federal Reserve Board may waive this condition in specific cases.
c) they are issued by a municipality,
(1) which has been in existence for a period of ten years.
(2) which for a period of ten years previous to the purchase has not defaulted for longer than 15 days in the payment of any part of either principal or interest of any funded debt authorized to be contracted by it.
(3) whose net funded indebtedness [72] does not exceed 10 per centum of the valuation of its taxable property, to be ascertained by the last preceding valuation of property for the assessment of taxes.

II. Except with the approval of the Federal Reserve Board, no Reserve Bank,

a) shall purchase and hold an amount in excess of 25 per centum of the total amount of warrants outstanding at any time and actually sold by a municipality.
b) shall invest an aggregate amount in warrants of all kinds to exceed a sum equal to 10 per centum of the deposits kept by member banks with such Federal Reserve Bank.

1. Regulation F, Series of 1915, January 26, 1915.
Federal Reserve Bulletin, May 1, 1915, p. 40.
2. Regulation E, Series of 1916.
Federal Reserve Bulletin, October 1, 1916, p. 535.
3. Regulation E, Series of 1917.
Federal Reserve Bulletin, July 1, 1917, p. 543.
4. Regulation E, Series of 1920.
Federal Reserve Bulletin, November 1920, p. 1183.
5. Regulation E, Series of 1923.

[71] For the sake of brevity, the Board employs the term warrant to mean, "bills, notes, revenue bonds and warrants," and the term municipality to mean, "State, county, district, political subdivision, or municipality in the continental United States, including irrigation, drainage and reclamation districts." See *Federal Reserve Bulletin*, May 1, 1920, p. 40.

[72] For a definition of net funded indebtedness, see *Federal Reserve Bulletin*, 1920, pp. 1183–1184.

III. Except with the approval of the Board, the maximum amount which may be invested at the time of purchase by any Reserve Bank in warrants of any single municipality shall be limited to the following percentages of the deposits kept in such Reserve Bank by its member banks:

a) five per centum of such deposits in warrants of a municipality of 50,000 population or over.
b) three per centum of such deposits in warrants of a municipality of over 30,000 population, but less than 50,000.
c) one per centum of such deposits in warrants of a municipality of over 10,000 but less than 30,000.
d) warrants of a municipality of 10,000 population or less shall be purchased only with the special permission of the Board.

IV. Opinion of recognized counsel on municipal issues or of the regularly appointed counsel of the municipality must be secured as to the legality of the issue and approved in each case by the counsel for the Federal Reserve Bank.[73]

Analysis of the Discount Provisions of the Federal Reserve Act. The success or failure of the discount policy of a central bank is contingent on two factors: first, on the excellence of the provisions of the charter governing its rediscount and open-market operations; and second, on the policies adopted by the administrators of the Bank. Even those best versed in the theory of central banking would be unable to institute successful discount policies were they hedged in and restricted by the limitations of the charter. Even though the provisions of the charter should be based on the best of principles, the discount policy of a central bank will not be a success if the administrators are men of inexperience or are unwilling for some reason to inaugurate policies they know to be correct. Are the provisions of the Federal Reserve Act governing the rediscount and open-market operations of the Regional Banks based on sound principles? Are they such as to assist and not hamper the directors of the regional banks in instituting well-grounded discount policies? The provisions of the Act on the whole reflect thoughtful and careful work on the part of the framers, and embody much that was found, by long and painful experience, to

[73] Municipal warrants may be purchased on certifications of banks or trust companies without opinion of counsel. The approval of legal opinion by counsel for one Federal Reserve Bank is sufficient to comply with requirements for other Reserve Banks if certified copy is obtained.

be best in European statutes, rules and customs. In providing for twelve regional banks, each with its own rates of discount, the Act took cognizance of the differences prevailing in the economic development of the various parts of the Union. The Act very ingeniously entrusted control over the Bank rate to two bodies, each of which could check and balance the other. To penalize banks rediscounting heavily at the Regional Banks, it was provided at one time that discount rates might be graduated. Should there be a deficiency in the reserves, the Act, following in this respect the Reichsbank's charter, provided for the levying of a tax, graduated according to the deficiency and which must be added to the Bank rate. In limiting paper eligible for discount to a maturity of ninety days and in requiring that it rise from some commercial or industrial transaction, the Act adopted the practice prevalent at most of the European central banks. Permitting agricultural paper to have a maturity of nine months is not a great departure from established practice, for it will be remembered that the Reichsbank permitted agricultural paper alone to have one renewal. The authority granted Reserve Banks to make advances on the promissory notes of member banks collateraled with the obligations of the United States Government or with eligible paper was done at the time as a convenience for the member banks. No one then thought that our public debt would soon assume such large proportions or that the war would be financed in large measure through money extended in this way by the Reserve Banks to the member banks. There is always danger, when central banks are permitted to make advances on government bonds, that their portfolio will become clogged with these securities. Therefore, in permitting the Reserve Banks to make advances on the promissory notes of member banks collateraled with government bonds or notes, the Act should have limited the amount of credit so extended and required that a rate of interest 1% above the Bank rate on commercial paper of corresponding maturities be charged. In giving the Board power to permit or compel inter-district rediscounting, means were devised for the conjoining of the reserves of each of the Regional Banks. The original Act did well in limiting the use of bankers' acceptances to the foreign field. That the development of the acceptance in America was desirable and necessary, if a discount market was to be had in New York, no one would dispute; but its growth should be a substantial one, slow and gradual. The acceptance is not indigenous to America.

Should its development be too rapid, abuses in its use might easily creep in. In widening the acceptance provisions of the original act and in permitting acceptances to be drawn for a great variety of transactions, the amendments transcended the bounds of ordinary prudence. The powers granted the Reserve Banks in the open market were justifiably extensive and followed the best in European practice. The provisions of the Act were on the whole favorable for the development of sound discount policies.

CHAPTER V

THE PRE-WAR DISCOUNT POLICY OF THE FEDERAL RESERVE SYSTEM

Business Conditions—August, 1914,—April, 1917. Familiarity with contemporary business conditions is essential to an adequate treatment of the discount policy of a central reserve bank. Directors of reserve banks are influenced in modifying discount policies by business developments, just as discount policies have often altered the course of business.

These generalizations apply particularly to the discount policy of the Federal Reserve System. At its very inception it had to grapple with some very difficult financial problems arising out of the World War.[1] One of the first problems to assume importance at the outbreak of the war was the demoralization of the foreign exchanges.

The Demoralization of the Exchanges. For many years past it had been customary, during each summer, for bankers in America to become debtors in the international short-time loan market through the issuance of letters of credit or through the drawing of finance bills. This indebtedness was ordinarily liquidated in the Fall by shipments of raw produce to Europe—particularly of cotton. In accordance with the usual practice, American bankers had become indebted during the Summer of 1914 to the extent of about $500,000,000,[2] with maturities spread over several months. On Monday, the 27th of July, as the Great War seemed inevitable, English banks discontinued the acceptance of bills of exchange. This they did, for it was realized that remittances on such of the bills as were accepted for parties in hostile nations would not be made until after the war. In consequence of this action New York banks refused to

[1] "During the half-century that has elapsed since the Civil War, there has probably been no period of six months within which there have occurred transformations of so far reaching a nature in American banking and finance as during the half-year between July 1, 1914 and January 1, 1915." Willis, *American Finance and the European War*, p. 144.

[2] Harding, *The Results of the European War on America's Financial Position*, p. 114. See, also, *First Annual Report of the Federal Reserve Board*, p. 13.

discount sterling bills, taking them for collection alone. The discontinuance of the acceptance business in London meant that the London balances of American banks could not be replenished, as was ordinarily the case, through the purchase of sterling bills and their sale on the discount market there. Only through gold shipments could these balances be increased. Though foreign exchange operations were on a normal basis as late as Saturday, the 25th of July, with sight sterling selling for $4.8820; by Monday, the demand for sterling to liquidate the American indebtedness, coupled with the difficulty of increasing or even of maintaining the London balances of American banks, drove sight sterling to $4.92 and by Friday to $5.50.[3] Between July 27 and the 1st of August some $36,000,000 [4] in gold were engaged for export. These shipments might have provided enough exchange to bring sterling back to par had not Europe begun to sell its holdings of American securities in New York and to withdraw the proceeds. By Thursday, July 30, the liquidation of American securities became severe enough to necessitate closing the New York Stock Exchange the following day.[5] At about this same time the activities of the German fleet in the North Atlantic became such as to check further shipments of commodi-

[3] To add to the difficulties of the situation obligations of New York City amounting to $80,243,941 payable abroad were about to mature. To provide the exchange necessary, the New York City Loan Syndicate was formed headed by J. P. Morgan and Kuhn, Loeb and Co. See *The Financial Review*, 1915, pp. 11–12.

[4] Sprague, *The Crisis of 1914 in the United States*, pp. 508, 512.

[5] The closing of the Stock Exchange has been severely criticised by Professor Willis, in an article entitled *American Finance and the European War*, p. 145. It is commonly justified on the grounds that further declines in the price of securities would cause wholesale failures among "bull" speculators, who would be unable to meet the debts owing their brokers and who in turn would be unable to repay the funds which they had borrowed on call from banks; and that the return of American securities in such vast quantities would induce an exportation of gold which American banks could not meet at the very time that they had to increase their loans. (See Sprague, *The Crisis of 1914 in the United States*, pp. 511–512.) Professor Willis points out that it was only those exchanges (the Stock and Cotton) whose products were falling in price that closed. Those exchanges whose products did not fall materially or which actually rose remained open. The stock exchanges which are supposed to record faithfully changes in the value of securities, seem to require for their existence a "bull" market or at all events only a gently falling market, the marginal purchase and call loan being as important as they are. Should prices of securities fall rapidly, the stock exchange seemingly must be closed as in 1914 and in 1873.

ties and gold to Europe, until the British had cleared the seas some two weeks later.

As a solution of this impasse, the Bank of England on August 12 established a branch at Ottawa, allowing Americans to draw sterling bills against gold sent there. The establishment of this branch might seem on first examination to have been a solution for removing the premium on sterling caused by the suspension of international commerce and by the large indebtedness owed Europe by America. Would not gold be exported rapidly from America to Canada and so liquidate the current indebtedness until such time as international commerce might be resumed? It must be remembered, however, that banks in America were hoarding their gold resources, as they had done in every other crisis, hoarding it to the extent of some $600,000,000.[6] This prevented the hoped-for improvement and necessitated the issuance in the aggregate of $382,502,645 [7] of emergency currency under the terms of the amended Aldrich-Vreeland Act, and $211,000,000 [8] of clearing-house loan certificates.

The Gold Exchange Fund. The newly appointed Federal Reserve Board felt that a solution of the exchange situation lay in coöperative action on the part of the banking community. To achieve such coöperation, the Board, together with the Secretary of the Treasury, called, on September 4, a meeting of the representatives of the clearing houses located in reserve and central reserve cities. A committee of bankers appointed at this conference recommended a plan for the establishment of a $100,000,000 gold exchange fund, a plan which received the endorsement of the Board on the 19th of September.[9] Subscriptions to the fund were to be received in gold or gold certificates both from state and national banks in reserve and central reserve cities and were to be deposited in the nearest sub-treasury. The total amount to be raised in each clearing-house district was pro-rated by the Federal Reserve Board. It was planned of course to ship the gold to Ottawa, and sell sterling bills for about $4.96 per pound against the

[6] Willis, *The Federal Reserve,* p. 105.

[7] See *Annual Report of the Comptroller of the Currency,* December 6, 1915, Vol. I, pp. 44–45. For the amendments to the Aldrich-Vreeland Act, see *First Annual Report of the Federal Reserve Board,* pp. 43–44.

[8] Willis, *The Federal Reserve,* p. 105. Clearing-house loan certificates were issued first on August 3, 1914. *The Financial Review,* 1915, p. 12.

[9] For details concerning the gold exchange fund, see *First Annual Report of the Federal Reserve Board,* pp. 12, 13, 70–73.

credits established there. The actual administration of the fund, the arrangements for the shipment of gold to Canada, and the determination of the rate at which sterling would be sold was placed in the hands of a group of New York bankers. Over 108 millions of dollars were subscribed. The administrators called for the payment of 25% of the subscriptions by the 13th of October. Of the amount paid in only ten millions were shipped to Ottawa; as the premium on sterling disappeared in November.[10] The opening of the North Atlantic to commerce led to a very rapid increase in America's exports to Europe, so rapid in fact that by October the exports exceeded imports for the first month since April. The possibility of sending goods to Europe and the increase in our export trade enabled America to liquidate its current indebtedness and rendered the further functioning of the gold exchange fund unnecessary, and it was dissolved in January.

The Cotton-Loan Fund. No other industry of similar magnitude was so deranged at the outbreak of the war as was the production of cotton. Before 1914 about 60% of the cotton grown in America was exported.[11] England, Germany, Belgium, France, Italy and Japan, in the order named, were the chief purchasers. The chaotic conditions immediately following the outbreak of the war made it practically impossible for American producers to export cotton to Europe. Later, when England had gained the mastery of the seas, the amount exported to Russia, Central Europe and Belgium dwindled to almost nothing. Even the quantity shipped to England, France and Italy shrank below normal by reason of the turning of cotton mills over to war purposes and the loss of skilled laborers. The decline in the demand for cotton coupled with an exceptionally large crop in 1914, amounting to 16.14 millions of bales,[12] and the closing of the cotton exchanges in America and England [13] paralyzed the industry and forced the price of middling uplands cotton in New York from 13.13 cents in July to 6.92 cents in October.[14] The

[10] *The Financial Review,* 1915, p. 40.

[11] *First Annual Report of the Federal Reserve Board,* p. 14.

[12] Cotton production in 500 lb. bale lots for 1913 amounted to 14.75 millions, for 1915 to 12.12, for 1916 to 12.78, for 1917 to 12.43, for 1918 to 12.97, and for 1919 to 12.03.

[13] The New York Cotton Exchange closed July 31, 1914 and re-opened on November 16, 1914. See *The Commercial and Financial Chronicle,* November 14, 1914, p. 1399.

[14] Courtesy of the Statistics Department, Federal Reserve Bank of New York. In November the price of middling uplands cotton in New York had

planter, growing his crops on borrowed money and normally liquidating his indebtedness by selling his crop abroad, was in desperate need of relief with the foreign markets cut off. To aid him, a plan of relief, somewhat similar to one proposed by Festus J. Wade of St. Louis, was approved by the Federal Reserve Board on the 24th of October.[15] It was proposed to establish a fund of $135,000,000, of which bankers in New York were to pledge $50,000,000, provided that banks, corporations, firms and individuals in non-cotton producing states (including Missouri and Virginia) pledged an equal amount. To the $100,000,000 so pledged, banks in cotton producing states were to contribute a further sum of $35,000,000 as loans were made from the fund.[16] The fund was to be administered by a Cotton-Loan Committee consisting of eight members, together with State and Local Loan Committees which had been appointed by the central committee. It was provided that such loans as were granted might be extended at 6% interest up to 80% of the value of middling or of the better grades of cotton, reckoning the price of cotton at six cents per pound. In addition to this security, an amount equal to 3% was to be deducted from each loan and added to a guarantee fund, which was to pay the expenses of administration and to make up such losses as might be sustained from any of the loans granted. Applications for loans were to be made not later than February 1, 1915, and unless extended for six months by the central Cotton-Loan Committee, all loans were to mature on February 1, 1916.[17] A planter, having first warehoused and insured his cotton amounting to 100 bales or more, might apply for a loan from the fund through a local bank. His application had to be approved by the Local and State Cotton-Loan Committees and by two members of the central Cotton-Loan Committee. If the application were finally approved, the loan would be granted provided that the local bank subscribed an amount equal to 25% of the amount of the loan applied for. By the 17th of November, the $100,000,000 had been subscribed by the banks in New York and in the non-cotton producing states. No money

risen to 7.63 cents and continued rising, reaching 20.33 cents when America entered the war.

[15] For a detailed discussion of the Cotton-Loan Fund, see *First Annual Report of the Federal Reserve Board*, pp. 206–209.

[16] Interest at the rate of 6% was to be paid on the amount of the paid-in subscriptions.

[17] Any balance remaining from the guarantee fund was to be returned pro-rata among the borrowers.

was loaned until the middle of January, and in all only $20,000 were loaned.[18] The release of large quantities of reserve money accompanying the opening of the Federal Reserve Banks enabled the southern banks to finance the planter without outside assistance.[19] Furthermore, as the price of cotton had begun to rise, the planter could borrow money more advantageously from his own bank than from the cotton-loan fund which arbitrarily fixed six cents as the price of a pound of cotton. The cotton-fund, like the gold-fund, had rendered its chief service "by restoring confidence, thus stabilizing values and establishing a basis for extension of credit on cotton as collateral." [20]

The Crisis of 1914. Though the crisis of 1914 was quite severe, especially as regards its effects throughout the Southern and Atlantic coast states, it did not degenerate into a panic as did the crisis of 1907. A liberal loan policy on the part of the banking community, and the issuance of large quantities of emergency currency and of clearing-house loan certificates prevented this by meeting the demand for funds to replace the gold exported abroad or hoarded. Interest rates were high, but as the following table shows they never approached the high interest rates prevailing in the crisis of 1907.[21]

INTEREST RATES DURING THE 1907 AND 1914 CRISES

	Call Loans New York Stock Exchange		*Sixty-Ninety Day Commercial Paper, New York*	
	1907	1914	1907	1914
August	3.06%	6.25%	6.25%	6.34%
September	4.00	6.00	6.79	6.70
October	21.00	6.00	7.10	6.44
November	12.25	5.41	7.40	5.50
December	14.60	3.38	8.00	4.35

Improvement in Business Conditions. Business conditions began to improve rapidly toward the end of 1914. The seas

[18] *The Financial Review*, 1915, p. 45, and letter to author from W. P. G. Harding, then Governor of Federal Reserve Board.

[19] See Willis, *American Finance and the European War*, p. 162.

[20] *First Annual Report of the Federal Reserve Board*, 1914, p. 15.

[21] Sprague, *The Crisis of 1914 in the United States*, p. 520. The interest rates given above were found in *The Review of Economic Statistics*, 1919, pp. 99, 103.

had been cleared of German raiders and American exports increased at a rapid rate, in fact so rapidly that sterling dropped back to $4.87 by January. The New York Cotton Exchange reopened on November 16. On November 28 trading in bonds was resumed on the New York Stock Exchange, on December 12 in about one-half of the stocks, and on the 15th in the remainder,[22] subject to the restriction that sales could not be made below certain minimum prices, generally the closing prices of July 30. On April 1, 1915, all Stock Exchange restrictions were removed.

The years 1915, 1916 and 1917 were ones of great prosperity. The Allies drew heavily on America for their impedimenta. First war industries and then others, as the good times became generally diffused, worked at a feverish pace to meet the increased foreign demand and the growing consumption at home. Gold flowed to America in unprecedented amounts, and huge loans were granted to the Allies. Even the American merchant marine experienced a boom such as had not been known for some fifty years.

America's Foreign Trade 1914–1917. The spectacular growth of America's foreign trade is portrayed in the following table. Even when the changes due to the rise in the general level of prices are eliminated, the increase still remains a very real one. In preparing this table the value of the exports for the years 1913 and 1914 was divided by the Bureau of Labor Index for wholesale prices; for 1915, 1916 and 1917 an export price index prepared by Professor Berridge was employed as the deflator.[23] Import values were deflated by the Bureau of Labor Index for wholesale prices:

[22] *The Financial Review*, 1915, p. 10.

[23] "Analysis of the Exports of Merchandise from the United States," by Berridge, *Review of Economic Statistics*, October 1919. The data for exports and imports were found in the *Statistical Abstract of the United States*, 1920, pp. 772–773. The correct method to have followed in deflating the export and import figures would have been to use, in both cases, index numbers based on export and import prices. Unfortunately, for imports these are not available before 1919 so the Bureau of Labor Index had to be used as a make-shift substitute. The Federal Reserve Board has prepared index numbers of the prices of exports and imports for 1919 and thereafter, using 1913 as a base. (See the *Federal Reserve Bulletin*, 1920, p. 499.) Their index number of the prices of exports during 1919 amounts to 221; for imports, 174, as against a Bureau of Labor Index of 212. In all probability this same relationship prevailed for the years 1914, 1915 and 1916 which would mean that the deflated value of imports as given above is too low.

THE FOREIGN TRADE OF THE UNITED STATES
Calendar Years 1913–1917
(000 omitted)

Years	*Exports (excluding reexports)*	*Imports*	*Excess of Exports*	*Exports deflated*	*Imports deflated*	*Excess of exports (deflated)*
1913	$2,448,284	$1,792,596	$ 655,688	$2,448,284	$1,792,596	$ 655,688
1914	3,071,058	1,789,276	1,281,782	3,071,058	1,789,276	1,281,782
1915	3,493,231	1,778,597	1,714,634	3,458,637	1,760,987	1,697,650
1916	5,422,643	2,391,635	3,031,008	4,444,789	1,928,738	2,516,051
1917	6,169,617	2,952,468	3,217,149	3,785,041	1,677,537	2,107,504

Huge increases in exports of food stuffs, including wheat, flour, meat, and dairy products, and of manufactured materials such as explosives, iron and steel goods, chemicals, metal for shells, automobiles, cotton and woolen goods were chiefly responsible for the large export balance.[24] Exports of raw materials such

INDICES OF EXPORTS TO EUROPE BY QUANTITIES OF MERCHANDISE [25]
(Base, 1911–1914 = 100)
(*Fiscal Years*)

	1915	1916	1917	1918	1919
Total	117	127	139	115	131
Foodstuffs in crude condition	294	214	205	91	204
Foodstuffs partly or wholly manufactured	140	173	159	172	243

[24] Dr. B. M. Anderson, Jr. (*Effects of the War on Money, Credit and Banking in France and the United States*, p. 157) has computed the ratio of America's foreign to domestic trade to be as follows for the years 1910–1918:

1910	9.9%
1911	11.4
1912	11.6
1913	11.5
1914	11.7
1915	11.4
1916	17.9
1917	13.7
1918	13.4

The Review of Economic Statistics, October 1919, p. 312.

Manufactures ready for consumption 102	175	213	195	176
Crude materials for use in manufacturing 92	73	72	58	69
Manufactures for further use in manufacturing 91	123	171	136	109

as unmanufactured cotton actually declined. While America's commodity balance was very "favorable" with the Allies, it was only moderately so with the European neutrals and actually "adverse" with the Orient and neutrals outside of Europe.

The American Merchant Marine. The phenomenal increase in exports gave American shipping a prominence it had not known for fifty years. In 1914, the American merchant marine had some 7,928,688 [26] gross tons; by 1917 this had increased to 8,871,037 and by 1920 to 16,324,024, through the construction of new ships and through the admission of foreign vessels to American registry by an act passed in August of 1914. Whereas in 1914, 8.3% of the exports and 11.4% of the imports were carried in American vessels, in 1917, 14.7% of the exports and 27.5% of the imports were so carried. While the American merchant marine had made great strides, it had not increased sufficiently to enable America to become an international creditor on this account. The United States was still a debtor by reason of the shipping charges she annually paid to the nationals of other countries.[27]

The Increase in Production. To produce goods for export and for increased domestic consumption, American industry worked at a faster pace. Farmer, miner, and manufacturer worked overtime that the domestic and foreign wants might be satisfied.

In the following table there are presented five indices showing the changes which took place through this period in the production of basic commodities.[28]

[26] The data in this paragraph were found in the *Statistical Abstract of the United States*, 1920, pp. 367, 380, 381.

[27] See *The Review of Economic Statistics*, 1919, p. 251.

[28] Sources:

I. E. W. Kemmerer, *High Prices and Deflation*, p. 7.

II. W. C. Mitchell, *History of Prices During the War*, Summary. War Industries Board, pp. 44–45.

III. W. I. King, *Is Production Keeping Pace with Population?*

INDICES OF THE PRODUCTION OF BASIC COMMODITIES

Year	I *Kemmerer's*	II *Mitchell's*	III *King's*	IV *Stewart's*	V *Federal Reserve Bank of N. Y.*
1914	99	99	100	101	103.7
1915	104	107	110.6	112	111.3
1916	109	111	131.7	117	121.4
1917	112	114	123.9	124	128.2
	Base: 1913 = 100	Base: 1913 = 100	Base: 1914 = 100	Base: 1911–1913 = 100	49 commodities Base: 1910–1914 = 100

These indices reflect an average increase in the production and trade of 1917 of 19.5% over that of 1914.

The Influx of Gold. The Allies resorted to a variety of means to pay for the vast flow of goods from the United States. During the early days of the war they canceled our floating indebtedness on open account,[29] later they exported gold, sold their nationals' holdings of American securities, and floated loans. By reason of the forces already noted, the gold export balance during the calendar year of 1914 amounting to $165,217,000 as compared with an export balance of $28,093,778 in 1913 and an import balance of $19,123,930 in 1912, was larger than ever before in the history of the United States.[30] The imports amounting to $57,383,000 were on a normal scale. The larger part of the export balance of 1914 was shipped to the account of England and France, shipments to France amounting to $85,000,000 and to the account of England to $100,000,000—most of which was sent to Canada. In the table below, giving monthly imports and exports of gold through 1914, it will be noted that beginning with May exports exceeded imports and continued to do so until December when imports exceeded exports by $3,978,000. Thereafter imports of gold regularly ex-

Bankers Statistics Corporation, Special Service, Vol. II, No. 12, August 24, 1920.

IV. W. W. Stewart, *An Index Number of Production*, The American Economic Review, March 1921, p. 68.

V. Courtesy of Statistics Department, Federal Reserve Bank of New York.

[29] See Willis, *The First Year of the New Banking System*, p. 616.

[30] *The Financial Review*, 1915, p. 86.

ceeded exports until America entered the war, with the exception of the first four months of 1916. Exports exceeded imports during those months by $18,832,000, the outflow for the most part going to Spain, South America, Japan, China and the West Indies. With the exception of these months, the inward flow of gold coming principally from Great Britain and her allies was uninterrupted.

MONTHLY GOLD MOVEMENT—1914 [31]
(000 OMITTED)

	Imports	*Exports*	*Balance*	+ = *Import* − = *Export*
Jan.	$10,442	$ 6,914	$ + 3,537	
Feb.	3,208	9,078	− 5,870	
March	7,842	2,632	+ 5,212	
April	3,460	407	+ 3,053	
May	1,972	16,835	− 14,863	
June	3,817	48,107	− 44,290	
July	3,391	33,669	− 30,278	
Aug.	3,045	18,125	− 15,080	
Sept.	2,761	21,887	− 19,126	
Oct.	5,945	50,301	− 44,357	
Nov.	7,391	14,526	− 7,135	
Dec.	4,109	130	+ 3,978	
Total	$57,383	$222,611	$ − 165,217	

GOLD MOVEMENT—1915–1917
(000 omitted)

Year	*Exports*	*Imports*	*Balance*
1915	$ 31,418	$451,949	$420,531
1916	155,888	685,983	530,105
1917 (Jan. Feb. March)	60,706	302,190	241,484
Total	$248,012	$1,439,122	$1,192,120

[31] The data for gold imports and exports were found in the *Monthly Statistical Bulletin*, Standard Daily Trade Service, January 18, 1922.

By April, 1917, the gold stock of America had increased by a billion dollars,[32] reckoning that $193,000,000 of the import balance went to make good the loss sustained in 1913 and 1914. One-third of the monetary gold stock of the world was held in the United States. As an offset to the goods the Allies were purchasing, the gold imports were a mere bagatelle; relative, however, to the gold stock of the world, and to the effect on bank reserves and on prices, the imports were of considerable importance and consequence.[33]

The Return of American Securities and the Export of Capital. Europe could not, as already indicated, pay for her purchases in America solely through exports of gold. The Allies were compelled to resort to other expedients. They were forced to return huge amounts of securities and to float large loans. It has been estimated that in 1914 Europeans owned six billions of dollars of American securities.[34] To secure goods which they needed, allied nations could either sell the American securities owned by their nationals directly in America or use them as collateral for the flotation of loans. In either case credits would

[32] *Date*	*Stock of gold in the United States* (000 Omitted)	*Gold in Federal Reserve Banks* (000 Omitted)	*Per cent. of country's stock in Federal Reserve Banks*
Jan. 1, 1915	$1,815,976	$ 241,321	13.3%
Jan. 1, 1916	2,312,444	542,413	23.5
Jan. 1, 1917	2,864,842	736,236	25.7
Jan. 1, 1918	3,040,439	1,674,405	55.1
Jan. 1, 1919	3,080,510	2,092,062	67.9
Jan. 1, 1920	2,787,714	2,062,845	74.0
Jan. 1, 1921	2,784,834	2,062,786	74.1
July 1, 1921	3,223,352	2,461,931	76.4

Hearing before the Joint Commission of Agricultural Inquiry, 67th Congress, 1st Session, under Senate Concurrent Resolution, 4, Part 13, p. 521.

[33] It has been suggested that Europe's purpose in sending gold to America was in part to bring about a rise in prices and easy money conditions in America. Rising prices in America would mean that Europe could dispose of her holdings of American securities at higher prices, and would benefit to the extent that the rise in stock prices preceded the rise in commodity prices. Further with the easy money conditions brought about by the gold imports, the Allied loans could be floated at lower rates of interest.

[34] Harding, *The Results of the European War on America's Financial Condition*, p. 114.

be established against which they could draw. Even before the outbreak of the war, from $350,000,000 to $500,000,000 of American securities had been returned. Early in 1915 England began to purchase her nationals' holdings of American securities and later requisitioned them for the purpose outlined. In the accompanying table, reproduced from *The Review of Economic Statistics*,[35] are given the amounts of American securities returned together with the loans floated by the Allies in America, which were collateraled for the most part by American securities:

THE EXPORT OF CAPITAL—1914—APRIL, 1917

Loans to foreign nations (91% for war purposes)	$2,375,000,000
American railway securities returned, August, 1, 1914—January 31, 1915	400,000,000
American railway securities returned after January 31, 1915	1,215,475,000
Other securities returned	304,000,000
Deposits by American banks in London	100,000,000
Total	4,394,475,000

Plans Suggested for the Prevention of Pre-War Inflation. The fear early grew among economists and bankers[36] in America that the influx of gold, in inducing prices to rise, would cause the period of prosperity to degenerate into an orgy of speculation. Governor Harding expressed this fear in 1916 when he said: "It is a solemn responsibility that we have . . . to avoid the dangers of inflation of currency, [and] inflation of credit, which is more insidious, and just as dangerous."[37] A number of measures were suggested with a view of preventing this result. Some felt, among them Mr. Paul M. Warburg,[38] that were the incoming gold impounded in the Federal Reserve Banks and controlled by them, the dangers of rising prices would be lessened. This same view was expressed in the Third Annual

[35] *The Review of Economic Statistics*, 1919, p. 246.

[36] For a symposium on the question as to whether the inflation could be checked, see *The Annalist*, August 30, 1915.

[37] Harding, *The Federal Reserve Law and Its Amendments*, p. 111.

[38] Warburg, *The Reserve Problem and the Future of the Federal Reserve System*, p. 115.

[39] *Third Annual Report of the Federal Reserve Board*, 1916, pp. 24–29. The Board also held that such control would permit an easier efflux of gold when the tide turned against America.

Report of the Federal Reserve Board.[39] The Report advocated that the Federal Reserve Act be amended so as to allow Federal Reserve notes to be issued directly against gold and that member banks be required to keep all of their reserves with the Federal Reserve System.[40] It was thought that both measures would give the System a more effective control over the heretofore unregulated gold inflow and would decrease the danger of inflation. How such control would check the rise in the price level or the rate at which it was rising, no one has clearly explained. It is an elementary principle that to affect prices, money and deposit currency must be in circulation, must actually be offered in exchange for goods and services. Gold not yet mined or gold which is hoarded whether in the vaults of a central reserve bank (save as it serves for the basis of credit expansion) or in a miser's hovel can have no effect on prices. The incoming gold would then have to be hoarded in the Federal Reserve Banks and not used as a basis for increased credit extensions, if its effect on prices were to be nullified. Had the Federal Reserve Banks, desiring to increase their gold holdings at their own expense, gone abroad and purchased this gold in the European gold mar-

[40] These suggestions were finally enacted by an act passed on June 21, 1917. In the early part of 1917 the Board recommended (*Federal Reserve Bulletin*, 1917, p. 1) that the date on which balances with central reserve and reserve city banks should cease to count as reserves be drawn back from November 1, 1917 to February or March, 1917, thereby concentrating the reserves of the country to a larger extent.

Before June 21, 1917, a Reserve Bank, wishing to issue Federal Reserve notes, was required by the Act to make application to the Reserve Agent for the amount required, accompanying the application by an amount of collateral consisting of notes and bills eligible for rediscount equal in amount to the Federal Reserve notes applied for. When the Reserve Bank paid out the notes so obtained, it immediately set aside a reserve in gold of 40% of the notes in circulation. Thus Federal Reserve notes were backed up by 140% of collateral and were issued against eligible commercial paper alone. To reduce its note liability, a Reserve Bank was permitted to deposit with the Reserve Agent Federal Reserve notes, gold, gold certificates or lawful money. During 1915 and 1916, the Reserve Bank followed the policy of depositing gold with the Reserve Agent, thereby reducing the note liability of the Bank and obtaining the commercial paper originally deposited and then immediately redepositing the commercial paper, securing additional notes, and then in turn obtaining the commercial paper again by deposits of gold. This practice was followed in order that as much of the gold stock in the country as was possible might be lodged with the Reserve Banks. As a result of this policy, the Federal Reserve note was virtually a gold certificate before 1917. See *Third Annual Report of the Federal Reserve Board*, pp. 25 and 230.

ket, it might have been possible for the Regional Banks to have hoarded it and by high discount rates to have discouraged extensions of credit based on it. The gold inflow was not so induced. It came here in payment of goods, and was deposited by exporters in commercial banks. To be in a position to pay interest on these deposits and to provide dividends for the shareholders, the commercial banks had to employ this gold, and they did so by increasing their loans. This they would have done whether the gold were in their own vaults or had been deposited by them as reserve funds in the Reserve Banks. So long then as the banks of the country expanded solely on the basis of the incoming gold, the Federal Reserve Banks were powerless to control the situation; unless through their open-market operations they would have been able to mop up all the surplus funds in the market, by selling their holdings of government bonds, municipal warrants, acceptances, etc., to the member banks. Any attempt of this kind would have been futile. The surplus funds were so plentiful and were coming in at such a rapid rate from Europe that the Federal Reserve Banks could not possibly have absorbed them. Only when the banks of the country had expanded as far as possible on the basis of the incoming gold and had then attempted to expand further by rediscounts with the Reserve Banks. could the Reserve System have controlled the situation.

The members of the Board suggested still another plan for the prevention or checking of inflation prior to the war. They urged that the Federal Reserve Act be amended in such manner as to permit them to increase from time to time, the reserve requirements of all member banks in a single district or in all districts upon the affirmative vote of five members of the Board.[41] The increases were not to exceed 20% of that part of the reserve of the member bank kept with its Reserve Bank and for periods not to exceed thirty days in length. This suggestion was never enacted. The Federal Advisory Council opposed it on the ground that, as it applied only to member banks and not to non-members, the fear among banks that their reserves might be increased at any time would discourage non-members from joining the System. An increase of the balances of member banks with their Reserve Bank of 20% would have had the following effect on the reserve requirements of that time, assuming that

[41] See, the *Federal Reserve Bulletin*, 1917, pp. 102, 108, also Westerfield, *The Reserve Situation in the Federal Reserve System*, p. 518.

the provisions of the Federal Reserve Act regarding the reserves required to be held by the member banks had gone into full effect:

INCREASE IN RESERVE AGAINST DEMAND DEPOSITS

Central reserve cities	from 18%	to 19.4%
Reserve cities	from 15	to 16.2
Country banks	from 12	to 13.0

Inasmuch as this suggestion contemplated but a temporary and slight increase in the reserve requirements, its influence, had it been adopted, would have been negligible in checking the rise in prices in view of the size of the gold imports. As the suggestion mentioned above was not enacted and as the Bank rates were not effective, the Board could do little else than to caution the Reserve Banks to restrict their open-market operations,[42] so that the funds in the market, already abundant, would not be increased.

Reasons for the Pre-war Advance in Prices. Though there is no unanimity of judgment as to the reasons for the advance in the general price level before 1917, the general consensus of opinion among economists [43] was, that three factors were chiefly responsible for the higher prices. The first of these and one which we have already elaborated was the inflow of gold. Two other factors, hardly less significant, were the reduction of the reserve requirements of commercial banks, and improvements in the mechanism for the collection and clearance of country items.

The Reduction in Reserves. Incident to the greater concentration, control, mobility, liquidity, and elasticity of the reserve moneys of the country, brought about by the inauguration of the Federal Reserve System, it was held, and correctly so, that the reserves national banks were required to maintain might safely be lowered. The joint stock banks in Europe, by virtue of their union into an efficient system, had found it possible to operate on much lower reserves than national banks were permitted to hold. These factors justified the framers of the Federal Reserve Act in making the following reductions in the reserves held by national and other member banks:

[42] See, for instance, the *Federal Reserve Bulletin*, 1917, p. 76, and Willis, *The First Year of the New Banking System*, pp. 612–613.

[43] See *Report of the Committee on War Finance of the American Economic Association*, The American Economic Review, Supplement No. 2, March, 1919, pp. 90–118.

RESERVES NATIONAL BANKS WERE REQUIRED TO MAINTAIN PRIOR TO 1914 AGAINST NET DEMAND AND TIME DEPOSITS: [44]

	Central Reserve Cities	*Reserve Cities*	*Country Banks*
Against all deposits	25%	25%	15%
Minimum distribution:			
In own vaults	All	½	6/15
With national banks in central reserve cities		½	
With national banks in reserve or central reserve cities			9/15

Under the Federal Reserve Act, effective November 16, 1914, member banks were required to maintain reserves against deposits as follows:

Central Reserve Cities	*Reserve Cities*	*Country Banks*
1. Net demand deposits. . . . 18%; 6/18 in vault, 7/18 with Federal Reserve Bank, balance in vault or with Federal Reserve Bank.	15%; first thirty-six months, 6/15 in vault, thereafter 5/15; first twelve months, 3/15 with Federal Reserve Bank, and for each succeeding six months 1/15 additional until 6/15 have been deposited; for thirty-six months, balance in vaults or on deposit with Federal Reserve Banks or national banks in reserve or central reserve cities	12%; first thirty-six months, 5/12 in vault, thereafter 4/12; first twelve months, 2/12 with Federal Reserve Banks, and for succeeding six months 1/12 additional until 5/12 have been deposited; for thirty-six months balance in vaults or on deposit with Federal Reserve Bank or national banks in reserve or central reserve cities
2. Time deposits, to be held in the same way as reserves against demand deposits 5%	.... 5%	....5%

[44] See Westerfield, *Banking Principles and Practice*, p. 403, and *Hearing before the Joint Commission of Agricultural Inquiry*, Vol. 2, p. 522.

It has been estimated that the reductions in the reserve requirements of national banks released $464,919,076 of reserve funds.[45] To this amount must be added the funds which were released by lowering, in a number of states during 1915, the reserve requirements of state banks. There was not the same justification for this action as there had been in the case of national banks. National banks had been unified in a system which permitted a lowering of reserves with no weakness to the banking structure. As state banks had not been united into such a system, a lowering of the reserve requirements was not justified.[46] Had the war not intervened, the rise in prices resulting from the release of these funds would have been gradually diffused over all gold standard nations, for gold would have flowed from America as prices advanced. This efflux of gold which would normally have taken place was prevented by the sudden and phenomenal increase in the export trade of the United States and by credit expansions in the allied nations.

The Increased Velocity of the Circulating Media. A third reason for the advance in prices was the increase which took place in the rapidity of turnover of America's circulating media. This was due to improvements brought about by the Federal Reserve System in the machinery for the collection and clearance of country items. The establishment of the gold settlement fund and other similar devices has cut down the time of collecting such items by half.[47] The dollar was consequently enabled to do a larger quantity of work, to work more efficiently, and to the extent that the velocity of the circulating media increased, prices rose.

[45] Few economists have given adequate attention to the importance, as a cause of the rising prices from 1914–1917 to the lowered reserves against time deposits. Prior to 1913 the reserve requirements against time deposits (payable on a notice of 30 days or more as now defined) were the same as against demand. No distinction was made. From the time the Federal Reserve Act became effective to June 21, 1917 the reserves member banks were required to maintain against time deposits were reduced to 5 %. The importance of this will be realized when we remember that in 1914 time deposits were equal to 22.6% of individual demand deposits, in 1915 to 22.8, in 1916 to 25.9, in 1917 to 27.2, in 1918 to 26.1, in 1919 to 30.4, in 1920 to 38.2. See, *Hearing before the Joint Commission of Agricultural Inquiry*, Sixty-Seventh Congress, First Session, Part 13, p. 523.

[46] See, *Second Annual Report of the Federal Reserve Board*, pp. 13, 14, 104–113.

[47] See, *Hearing before the Joint Commission of Agricultural Inquiry*, 67th Congress, 1st Session, Part 13, p. 523.

The Range of Interest Rates. The abundance of funds in America during 1915 and 1916 led to extremely low interest rates as banks, particularly those located in the large financial centers, competed against each other to place loans.[48] The following table gives the range of rates in the New York Money market.[49]

Year	*Call loans*	*Sixty-Ninety Day Commercial Paper*	*Four-Six Months Commercial Paper*
1913	3.22%	5.60%	6.20%
1914	3.44	4.78	5.47
1915	1.91	3.45	4.01
1916	2.62	3.43	3.84
1917	3.43	4.74	5.07

The Increase in the Circulating Media. The influx of gold, the release of reserve moneys, were all reflected in a rapid increase in the circulating media of America—money and deposit currency. Prof. E. W. Kemmerer has very carefully computed the actual amounts of money in circulation and bank deposits subject to check and has prepared index numbers for the same, which are reproduced below: [50]

Year	*Monetary Circulation*		*Bank Deposits*	
	Actual (Millions)	*Index Numbers*	*Actual (Millions)*	*Index Numbers*
1913	$3,390	100	$12,678	100
1914	3,505	103	13,430	106

[48] Loans, discounts and investments of commercial banks increased as follows:

Date	*National Banks*		*State Banks, Private Banks, Savings Banks and Trust Companies reporting to the Comptroller of the Currency*	
	Loans and Discounts	*Investments*	*Loans and Discounts*	*Investments*
June 30, '14	$6,430,069	$1,914,889	$8,858,288	$3,670,636
June 20, '17	8,957,678	3,013,068	11,674,130	4,990,752

Sources: *Annual Report of the Comptroller of the Currency*, 1914, pp. 26 and 81.
Ibid., 1915, p. 49.
Ibid., 1917, pp. 37, 39 and 90.

[49] *The Review of Economic Statistics*, 1919, pp. 95, 99, 103.
[50] Kemmerer, *High Prices and Deflation*, pp. 12, 27.

Year	Monetary Circulation		Bank Deposits	
	Actual (Millions)	Index Numbers	Actual (Millions)	Index Numbers
1915	3,682	109	14,411	114
1916	4,159	123	17,840	141
1917	4,914	145	21,273	168

As the table shows, money in circulation increased by 45%, bank deposits by 68% ; while, as already indicated, trade and production increased by only 19.5%.[51] The inevitable consequence of such an excess of circulating media to trade needs, increased further by an increased velocity of circulation, were rising prices [52] and a decline in the purchasing power of money, as shown by the following index numbers:

Year	Bureau of Labor Statistics	Annalist	Bradstreet	War Industries Board	Dun
1913	100	100	100	100	100
1914	98	104	97	98	101
1915	101	106	107	101	105
1916	127	126	128	125	123
1917	177	187	170	173	169

Base—July, 1913–June, 1914 = 100.

The pre-war years were very prosperous ones for America. The farmer, the laborer, the manufacturer, the stock speculator,[53]

[51] Other things remaining equal, an increase in trade would bring about a fall in prices. But other things do not remain equal, an increase in trade would normally increase V and V_1 in the quantity formula, an increase which would tend to nullify the influence that the increase in trade might have in bringing about lower prices. See Fisher, *The Purchasing Power of Money*, pp. 165–169.

[52] The rise in prices in America from June, 1915.—July, 1917, was a more rapid one than had ever occurred in a nation on a specie basis.

[53] The average of 25 industrial securities advanced from a low in 1915 of $51.85 to $86.60 in 1916. Courtesy of the Statistics Department, Federal Reserve Bank of New York.

Professor Kemmerer has prepared the following index of speculation, based on the number of shares traded on the New York Stock Exchange, for the years 1910–1917 :—

1910–130	1914– 38
1911–100	1915–137
1912–104	1916–184

the ship builder were all enjoying a full dinner pail—filled indeed with choice and dainty morsels. The only ones not so prosperous were those living on fixed incomes or those whose salaries had not kept pace with the rise in prices. These classes were impoverished relatively speaking, the others were enriched. The "hard times" of 1913 and 1914, and the bread lines of those days were quickly forgotten, as people became busily engaged in turning out the sinews of war. It was in the midst of such economic conditions as these that the Federal Reserve System spent its adolescence.

THE PRE-WAR DISCOUNT POLICY OF THE FEDERAL RESERVE SYSTEM

We have at last reached a point where we may plunge into a discussion of the discount policy of the Federal Reserve System. The first two chapters were devoted to a treatment of the development of the modern concept of the functions of the Bank Rate and of the methods employed by central banks in Europe in controlling credit. As the concept of credit control was nonexistent in America prior to 1914, it was necessary to refer in this way to European experience in order to establish criteria by which the discount policy of the Reserve Banks might be judged. After discussing the origins of credit control in the United States and the background of the Federal Reserve Act, the discount provisions of that measure were set forth in detail in Chapter IV. The first section of this Chapter was devoted to a survey of business conditions in America from August 1914, to April 1917. The closeness of relationship between discount policies and business developments necessitated this study. At present we are embarking upon a study of the pre-war discount policies of the Reserve System. Our treatment of this will be divided into the following sections:

a) First of all there will be discussed those principles which guided the Reserve Banks to a greater or less degree in fixing their Bank rates.

b) This will be followed by a statistical analysis of the rediscounting and open-market operations of the Regional Banks.

c) The Chapter will conclude with a summary and critical analysis of the pre-war discount policies of the System.

1913– 66 1917–147

Average of 1910–1914– 100

See Kemmerer, *Inflation*, The American Economic Review, June 1918, p. 249.

PRINCIPLES UNDERLYING THE PRE-WAR DISCOUNT POLICY OF THE FEDERAL RESERVE SYSTEM

The duty of putting the Act into effect was entrusted to the Reserve Bank Organization Committee, consisting of the Secretary of the Treasury, the Secretary of Agriculture, and the Comptroller of the Currency. By January of 1914 this Committee had secured the services of a group of seven experts, with H. Parker Willis as chairman, known as the preliminary organization committee.[54] To them was delegated the task of delineating the Federal Reserve Districts, of outlining the internal organization of the Regional Banks, of providing for the election of the directors of the Banks, and, in short, of supervising all the details of setting up the new banking institutions.

The Reserve Banks Opened on Nov. 16, 1914. The experts assisting the Organization Committee had not as yet completed their task when the financial and business structure of the country was rudely shocked by the outbreak of the Great War. The uncertainty and confusion of those times led many to express the opinion that the Federal Reserve Banks should not be opened until conditions should have become normal. Wisely, this policy was not adopted. At a conference of the newly-chosen Governors and Directors of the Regional Banks, held in Washington on October 20–21, 1914, the decision was reached to carry on the work of establishing the banks.[55] So vigorously was this pushed forward that the Secretary of the Treasury, whose duty it was under the Act to specify the date of the formal opening of the Banks, was able to name the sixteenth of November. On this occasion President Wilson in a letter to Secretary McAdoo enthusiastically exclaimed: "A new day has dawned for the beloved country whose lasting prosperity and happiness we so earnestly desire." [56]

The Formulation of a Discount Policy. Before the Regional Banks had officially opened, the Federal Reserve Board in conjunction with the officers and directors of the new institutions, discussed the formulation of a discount policy. This discussion was prompted by recognition of the fact that the twelve banks ought to follow a uniform policy. For one regional bank, for instance, to take a conservative course by setting its rates above

[54] See *Report on the State of the Finances*, 1914, p. 28.

[55] See *First Annual Report of the Federal Reserve Board*, p. 182.

[56] This letter is quoted in the *Commercial and Financial Chronicle* November 21, 1914, p. 1497.

those prevailing in the market, and for another to rediscount with undue liberality, would of course militate against the harmonious working of the system. In formulating the discount policy of the new institutions, at least two problems were involved. In the first place, a decision must be reached regarding the relationship of the Bank rates to those prevailing in the market; and in the second place, a decision would have to be made regarding the scope and place of the Reserve Banks in the banking system as a whole—whether they were to function continuously or only in acute emergencies.

Bank Rate to Rule above Market Rates. With regard to the first point, the establishment of discount rates, the officials of the new banks were divided into two schools of thought. One group felt that the rates should be low, low enough in fact to stimulate the use of the new institutions. The second group, profiting perhaps by the ill-fated experience of the Second United States Bank during its early years, felt that the System should proceed cautiously at first and that the rates established should be above those of the market. The members of the Board, so far as one may judge from passages in its Annual Reports, were themselves advocates of the second point of view and were convinced that at the start "conservatism should be the guiding policy in establishing discount rates." [57] The adoption of such a policy, the Board felt, would "prevent the accumulated strength of the banks from being dissipated and protect their resources from being used to finance operations not calculated to add to the strength or solidity of general banking conditions." [58] Several factors had forced the Board to this point of view. Although exports to Europe were increasing rapidly, there was still a large cash balance owing the nationals abroad for which gold might be demanded at any time, a demand which would fall on the gold reserves of the Reserve Banks. A large quantity of American securities was held abroad which might conceivably be dumped on the American market. Further, there was more than $300,000,000 of emergency currency in circulation which would gradually have to be retired. As the war continued and great quantities of capital were destroyed in Europe, the Board believed that interest rates there would surely rise above rates prevailing in this country. This would hasten the flow of European securities to America, and would accelerate the export of capital from America.[59]

[57] Willis, *The Federal Reserve*, p. 117.
[58] *First Annual Report of the Federal Reserve Board*, p. 7.
[59] *Ibid.*, p. 182.

The Federal Reserve Banks Not Emergency Institutions. Having reached the decision that the Bank rates should be established above the rates prevailing in the market, the Board and the officials of the Banks had next to consider the proper scope of the system. Were the Reserve Banks to function continuously, either through rediscounting bills for member banks or through open-market operations, or were their activities to be confined solely to the meeting of emergencies? If they were to be merely emergency institutions, as the National Reserve Association would have been, their range of activities save in time of financial stress would be a most narrow one. They would not participate in the open-market, they would not act as clearing centers, and they could not in other ways be continuously helpful to member banks and to the public. If this policy prevailed, the Regional Banks were doomed for the most part to a state of inactivity, initiating nothing, but waiting until some emergency forced the member banks to rediscount. The adoption of the principle that the Bank rates should rule above market rates would not in itself preclude the Reserve Banks from functioning continuously. Bank rates in Europe usually rule above market rates, yet the central banks there have played a very active rôle in the market. The Reserve Banks through their open-market operations could do likewise. The Board then had to choose between two courses of action: whether the Reserve Banks were to operate continuously but with their rates above the market, or whether they were to function only as called upon by the member banks. The conclusion was reached that the Banks were not designed to function only in emergencies, but that the Act had created a permanent and costly organization which should continuously occupy itself in the interests of the common good, adapting itself to "the needs of industry, commerce, and agriculture—with all their seasonal fluctuations and contingencies." [60] Their duty, the Board held, was not to await emergencies, but by anticipation to prevent them in so far as this was possible. Not that the Reserve Banks should compete with the larger commercial banks in attempting to employ their resources to a maximum—any such attempt would sooner or later end disastrously. The Reserve Banks should, in ordinary times, in the opinion of the Board, invest enough of their resources to earn their expenses, protect communities against exorbitant rates of interest, and build up a portfolio sufficiently

[60] See *First Annual Report of the Federal Reserve Board*, p. 17.

large so that through the release of additional funds or through the withdrawal of those invested, the Reserve Banks might exercise a decided effect on the market. Furthermore, they must at all times guard against becoming an instrument for the promotion of the selfish interest of any sectional or private group. "Regulation in ordinary times, as well as protection in extraordinary times, may be expected to become the chief service which these institutions will perform." [61] It was hoped that the Reserve Banks would function continuously in the interests of the whole people, in equalizing interest rates and supplies of capital. They were to be bankers' banks, not in the sense that they were to operate only in emergencies or solely in the pecuniary interests of the banking community, but in the larger meaning of the term, that they were to act through banks and on their own initiative to serve the interests of all.[62] In so doing they would convey to the public "all those benefits that result from united and uniform financial action." [63]

In circular No. 13 [64] sent to all the Reserve Banks, the Board outlined in detail the discount policies which it favored and which it believed might be pursued to advantage by them. In the first place, the Board advised the Regional Banks to extend

[61] See *First Annual Report of the Federal Reserve Board*, p. 18.

[62] Willis, *The New Banking System*, p. 617.

In opposing the theory that the Reserve Banks should operate only in emergencies, Professor Sprague wrote: "If the reserve banks are to be anything more than rather cumbersome and expensive emergency institutions, they must be something more than a reserve upon which other banks rely for assistance when subjected to unusual demands for money and credit from their own depositors. The reserve banks must be able to exert some influence upon the financial situation in ordinary times." Sprague, *The Federal Reserve System in Operation*, p. 628.

In the same connection Professor Willis has written: "It [the Federal Reserve Act] created a permanent and costly organization; it provided regular and sustained functions which must be continuously performed in order to render the system efficient; it looked to regular rediscount transactions, not merely as a means of paying its expenses and dividends but as an indispensable medium through which to affect rates of interest and lending conditions. For all these reasons it was expected to play an active and important part in the market. This, however, it has not yet succeeded in doing. Rediscount operations with it have been small, largely because of the great ease of money the country over." Willis, *What the Federal Reserve System Has Done*, p. 285.

[63] Willis, *The New Banking System*, p. 617.

[64] Circular No. 13 may be found in the *First Annual Report of the Federal Reserve Board*, pp. 182–184. This circular was issued by the Board on November 10, 1914.

credit facilities liberally where the abnormal conditions of the Fall of 1914 had created emergencies requiring prompt accommodation. In the second place, the Reserve Banks were advised to protect their gold holdings so that they might be equal to the task of meeting all demands made upon them. The credits extended by the Reserve Banks upon these principles did permit the rapid retirement of the Aldrich-Vreeland currency.[65] The phenomenal increase in America's exports beginning with January 1915, and the influx of gold which resulted, removed the problem of protecting the gold holdings of the Regional Banks. Their task became rather that of preventing in so far as was possible price increases based on the additional amounts of gold.

Fixing of the Bank Rate. In response to a telegraphic inquiry sent from the Board, the Regional Banks, a week or so before their opening, submitted their opinions with respect to the exact rates of discount thought advisable. Upon comparison, it was found that the rates suggested did not vary widely, ranging from 5 to 7% for ninety day paper.[66] In the following table are given the rates initially fixed:[67]

	Maturities			
Federal Reserve Bank of	30 *days or less*	30–60 *days*	60–90 *days*	*Over* 90 *days*
Boston	6%	6%	6%	6%
New York	5½	6	6	6
Philadelphia	5½	6	6	6
Cleveland	6	6	6	6
Richmond	6	6	6	6
Atlanta	6	6½	6½	6½
Chicago	6	6	6	6
St. Louis	6	6	6	6
Minneapolis	6	6½	6½	6½
Kansas City	6	6½	6½	6½
Dallas	6	6½	6½	6½
San Francisco	6	6½	6½	6½

It will be noted that at five of the Banks the same rate was established for all maturities of paper, while at the other seven

[65] In this connection, see the *Annalist*, Vol. 5, No. 106, Jan. 25, 1915, p. 86.

[66] See *First Annual Report of the Federal Reserve Board*, p. 10.

[67] *Ibid.*, p. 203. Governor Strong of the Federal Reserve Bank of New York has declared that the rates fixed were determined by those charged by the Aldrich-Vreeland Associations and by those borne by clearing house loan certificates.

the rates increased with the length of the maturities. The rates fixed ruled above market rates in the financial centers of the country, but below line of credit rates charged through the South and West. The effect of establishing rates above those prevailing in the financial centers, as will be indicated later, prevented accommodation from being asked for by member banks save where there was a real need for it and discouraged rediscounting simply for the sake of undertaking new operations or of extending those already in existence.[68]

The Decline of Interest Rates during 1915 and the First Half of 1916. The resumption of normal trade relations with Europe, the passing of the crisis of 1914 in America, the influx of gold, and the release of reserve funds caused market rates of interest, which had reached a peak in September 1914, to fall rapidly, reaching a minimum in November 1915.[69] The Bank rates, which had ranged from 5½ to 6½% as initially established, followed the market rates on the downward trend, and were reduced by successive stages in December 1914 and in January and February 1915. The Bank rate on paper maturing from thirty to sixty days at the Federal Reserve Bank at New York, for example, was changed as follows:[70]

		Rate
Established—	November 16, 1914	6%
Date of change—	December 18, 1914	5½
	December 23, 1914	5
	February 3, 1915	4½
	February 18, 1915	4

The other Bank rates at the Federal Reserve Bank of New York and the Bank rates at the other Regional Banks, generally

[68] Willis, *The Federal Reserve*, p. 117.

[69] See table on pp. 194–195.

"Inflation in America undoubtedly had an important influence through 1915 and 1916 in lowering interest rates. To the extent that this was true people paid for the lower interest rates in higher prices." Kemmerer, *The War and Interest Rates*, p. 106.

"With the turn of the tide of gold in December [1914] however, and with the reopening of the stock exchange, the rates dropped rapidly and for over a year from January, 1915, to May, 1916, New York enjoyed a period of the easiest money rates ever known in the history of the Street." Anderson, *Effects of the War on Money, Credit and Banking in France and the United States*, p. 155.

[70] *First Annual Report of the Federal Reserve Board*, p. 203 and *Second Annual Report of the Federal Reserve Board*, p. 28.

speaking, moved similarly to the rate shown above. The Bank rates were practically stationary during the second half of 1915 and through 1916, tightening a bit in the last months of 1916 and in the first quarter of 1917.

Bank Rates above Market Rates in Financial Centers. Through this period the Reserve Banks, or at least those in the financial centers, acted in accordance with the recommendations of the Board and adopted the policy of maintaining their rates above those prevailing in the market. In the following chart is presented the relationship between the Bank rate at the New York Federal Reserve Bank on sixty to ninety day commercial

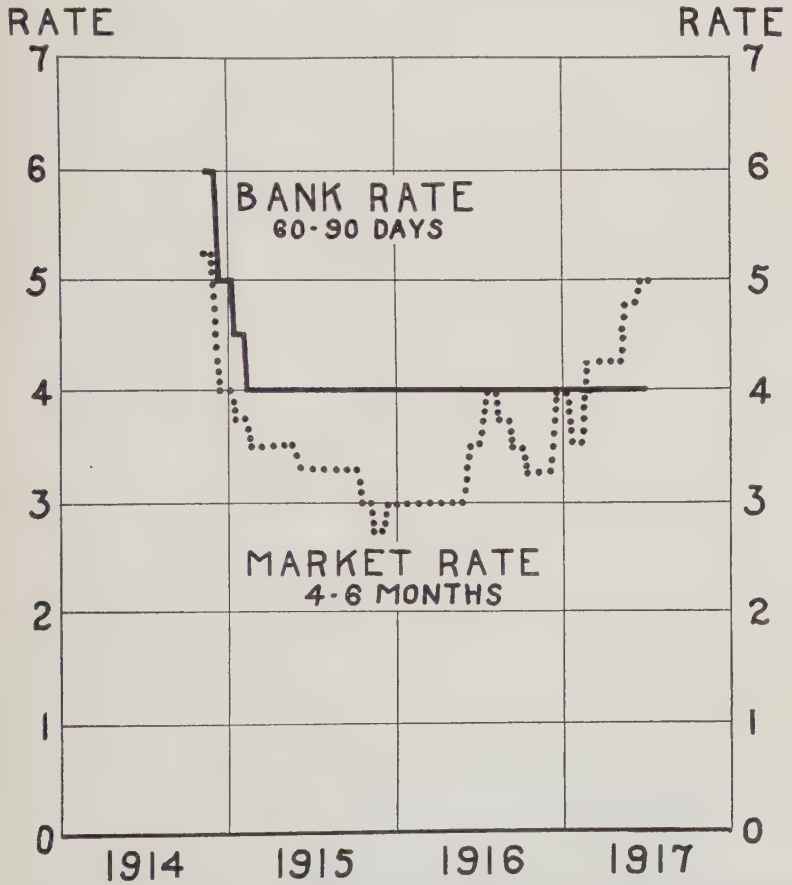


CHART XIII: VARIATIONS IN BANK RATE AT THE FEDERAL RESERVE BANK OF NEW YORK COMPARED WITH VARIATIONS IN MARKET RATE.

paper and the market rate on four to six months paper. It will be noted that the Bank rate prior to February 1917, either equaled or ruled above rates in the market.[71]

From June 1916, the trend of the market rate of interest on sixty to ninety day paper was upward. By December 1916, it had risen to a height equal to the Bank rate. In February and March the market rate exceeded the Bank rate.

Lower Rates on Acceptances and Paper of Shorter Maturities. Not only was it an avowed policy of the Board and of some of the Regional Banks [72] to maintain the Bank rates above those prevailing in the market on corresponding types of paper, a policy which discouraged unnecessary rediscounting and kept down the portfolios of the Banks,[73] but it was also a part of their policy to encourage by preferential rates the rediscounting of paper of shorter maturity or of particular types of paper such as trade acceptances. Lower rates of discount on paper of shorter maturities was quite justified, for the liquidity of central reserve holding banks is increased in direct proportion to the amount of short-term paper in their portfolios. Especially is liquidity of importance in those Reserve Districts located in the more undeveloped sections where the tendency to extend commercial banking funds for fixed-capital purposes is apt to prevail. Whether the policy of granting preferential rates on acceptances was justified or not will be discussed in a later section.

The policy of establishing different rates for various maturities and types of paper had proceeded so far that by January of 1917 there were no fewer than thirteen classifications of paper at the Reserve Banks with a Bank rate for each type.

[71] Source: *Hearing before the Joint Commission of Agricultural Inquiry*, Vol. 2, p. 562.

[72] That such was the avowed policy of certain of the Reserve Banks is indicated by:

Second Annual Report of the Federal Reserve Board, pp. 158 and 295, and *Third Annual Report of the Federal Reserve Board*, pp. 224 and 335.

[73] "The important effect of the establishment of these rates of discount was to prevent accommodation from being asked by member banks except in those cases where there was a real need for it, since the rates were too high to encourage the borrowing of funds from the reserve institutions simply for the sake of undertaking new operations or of extending those already in existence. As was expected, therefore, the amount of accommodation applied for at most of the banks was relatively small." Willis, *American Finance and the European War*, pp. 160 and 161.

Classification of Eligible Paper at the Federal Reserve Bank of Boston, January 1, 1917.[74]

Eligible Paper	*Rate*
1. Member banks' collateral notes	4%
2. Paper maturing within 10 days	3½
3. Paper maturing within 15 days	—
4. Paper maturing between 11 and 30 days	4
5. Paper maturing between 16 and 30 days	—
6. Paper maturing between 31 and 60 days	4
7. Paper maturing between 61 and 90 days	4
8. Agricultural and live-stock paper over 90 days	5
9. Trade acceptances to 30 days (inclusive)	3½
10. Trade acceptances, 31–60 days	3½
11. Trade acceptances, 61–90 days	3½
12. Commodity paper maturing within 90 days	4
13. Bankers' acceptances	2–4

In March 1917, the Board took steps to revise and standardize the rediscount rates in view of the growing complexity in the classification of eligible paper.[75] The following schedule of eight instead of thirteen classifications was proposed:

1. Paper maturing within 15 days, including collateral notes.
2. Paper maturing within 16–60 days.
3. Paper maturing with 61–90 days.
4. Trade acceptances maturing within 60 days.
5. Trade acceptances maturing within 61–90 days.
6. Bankers' acceptances maturing within 90 days.
7. Commodity paper maturing within 90 days.
8. Agricultural paper maturing within 90–180 days.

The Reserve Banks cordially approved of this suggestion and within a short time had adopted the revised schedule, submitting it for formal approval to the Board.[76] The discount rates in force on April 30, 1917, after all the Reserve Banks had

[74] The rates at the Federal Reserve Bank of Boston were taken as typical of the rates at the other Banks. The Federal Reserve Banks of Boston and San Francisco alone had no rates on paper maturing within 15 days or 16–30 days. The rates given may be found in the *Third Annual Report of the Federal Reserve Board, pp.* 35–40.

[75] See *Federal Reserve Bulletin*, 1917, pp. 241 and 242.

[76] The acceptance of this proposal initiated by the Board on the part of the Banks illustrates the power which the Board possesses over changes

adopted the new classification are given in the accompanying table:

DISCOUNT RATES IN EFFECT APRIL 30, 1917

Maturities

Federal Reserve Bank of	*Discounts*				*Trade Acceptances*		
	Within 15 days—including member banks' collateral notes	16–60 days, inclusive	61–90 days, inclusive	Agricultural and live stock paper	To 60 days	61–90 days	Commodity paper maturing within 90 days
New York	3	4	4	5	3½	3½	...
Boston ..	3½%	4%	4%	5%	3½%	3½%	4%
Philadelphia	3½	4	4	4½	3½	3½	3½
Cleveland	3½	4 [a]	4½	5	3½ [b]	4	4
Richmond	3½	4	4	4½	3½	3½	3½
Atlanta	3½	4	4½	5	3½	3½	3½
Chicago	3½	4	4½	5	3½	3½	...
St. Louis	3½	4	4	5	3½	3½	3½
Minneapolis	4	4	4½	5	3½	4	4
Kansas City	4	4½	4½	5	4	4	4
Dallas	3½	4	4½	5	3½	3½	3½
San Francisco	3½	4	4½	5½	3½ [b]	3½	3½

[a] Rate of 4½% for paper maturing within 31–60 days.
[b] Rate of 3% for paper maturing within 30 days.

Equalization of the Bank Rates. Another tendency manifested in the discount policy of the Federal Reserve System during the pre-war period was the equalization of the Bank rates in the various districts.[77] On January 1, 1915, rates on sixty to ninety day paper ranged from 5 to 6% at the various Regional Banks. On January 1, 1917, these same rates ranged from 4 to 4½%. The policy of equalizing interest rates was ac-

in Bank rates. Thus in this particular instance the Board advised the Regional Banks that certain changes would be desirable, the Reserve Banks accepted this advice, proposed the changes, and submitted them to the Board for formal approval.

[77] That such was the policy of the Board is shown by the following extract from the *Second Annual Report*, p. 5:

"The Board has endeavored during the past year to develop a consistent discount policy, graduating its rates according to the maturity and character of paper discounted or purchased in the open market. Beginning at the opening of the system with a comparaively high rate for ordinary commercial paper and with more or less variation between the different districts, the reserve banks have during the year steadily reduced the general level of discount rates and have worked rapidly and effectively toward uniformity for the entire country."

complished by reducing the Bank rates in some districts at a faster pace than in others. The equalization of the Bank rates proceeded without much reason. Why should the Federal Reserve Banks of Dallas, Richmond and Atlanta, whose resources had been quite severely tested in 1915 and 1916 by rediscount operations, have had, on January 1, 1917, a 4% rate on paper maturing within 61–90 days, when Cleveland and San Francisco, whose discounts of commercial paper in 1916 amounted to only 4.3% of the whole,[78] had a 4½% rate? Laudable as is the policy of endeavoring to equalize interest rates in all sections, it seems irrational that the rates in sections which are not thoroughly developed economically, and which are borrowing sections,[79] should have been reduced below the rates prevailing in the financial centers. The equalization of interest rates over a country which varies greatly from section to section as regards economic development, is a task too stupendous for the resources of the Reserve Banks to accomplish by themselves. Indeed, it would be a grave error for them to try to accomplish this by keeping their rates below those prevalent in the market. The demands for capital should never be met from funds supplied by reserve-holding banks. Such demands should be met solely from current savings. For central banks to meet such demands would not only tend to freeze their assets, but would also tend to raise prices through the creation of false purchasing power.[80]

Summary. In a very general way the pre-war discount policy of the Federal Reserve System has been indicated, if indeed the principles according to which the rates were changed were of sufficient uniformity among the various banks to be dignified by the term "policy." In the financial centers of the country such as Boston, New York, Philadelphia, Cleveland, Chicago and San Francisco, the Bank rates ruled generally above the market rates. Elsewhere the Bank rates ruled at or below the market rates, especially if by the market rate we mean the average rate charged by member banks to their customers on paper which has been rediscounted by the Reserve Banks. The principle of maintaining rates above the market was therefore not a uniform one. There was greater uniformity in the principle of graduating rates according to the maturity and type of paper. For the

[78] *Third Annual Report of the Federal Reserve Board*, p. 89.
[79] *Second Annual Report of the Federal Reserve Board*, p. 360.
[80] See Cassel, *Money and Foreign Exchange after 1914*, p. 104.

most part rates were lowest on paper of shorter maturities and on acceptances.

The policy of equalizing interest rates over the country was carried out in a haphazard fashion. The reductions made to equalize the Bank rates were carried out without due regard to fundamental economic conditions and were on the whole devoid of justification.

Having outlined the principles by which the Reserve Banks were more or less governed in setting the Bank rates, we shall pass to a statistical analysis of the rediscounting and open-market operations of the new institutions.

STATISTICAL ANALYSIS OF REDISCOUNTING AND OPEN-MARKET OPERATIONS

Rediscounting of Commercial Paper Maturing within Ninety Days. The Act had provided that eligible paper maturing within ninety days must have arisen from, or the intent of the borrower must be, to use the proceeds in, bona-fide commercial transactions; or that paper eligible for discount must be secured by staple commodities; or that it must have arisen from transactions in Government bonds. The Board realized that the liquidity of the borrower must be the real test of whether the money borrowed had been or would be used for commercial purposes.[81] The ascertainment of the borrower's liquidity would presuppose an analysis of such ratios obtained from his financial statement as the current ratio, the ratio of sales to receivables, of merchandise to receivables, of net worth to debt, etc.[82] In Circular No. 13, the Board prescribed that elaborate financial statements must be handed to the Reserve Banks covering names appearing on paper offered for rediscount. It was soon realized, as mentioned in the previous chapter, that the provisions of this circular were so drastic, in view of the lack of standardization of commercial paper in America, that little of the paper presented by borrowers, in small communities at least, would be acceptable. Consequently this circular was modified with the result that the amount of paper potentially eligible for rediscount was considerably increased.

[81] H. Parker Willis has stated that a borrower may be said to be in a liquid condition if the aggregate of his loans and receipts are intended to anticipate claims which will shortly mature. See Willis, *The Federal Reserve*, p. 188.

[82] See Wall, *Analytical Credits, Chapter* 6–13 inclusive.

Rediscounting Light before April, 1917. Although the Board had greatly modified the drastic character of Circular No. 13, rediscounting in the majority of districts before April 1917, was quite light. The reasons for this are several. Due to the gold imports and the lowering of the reserve requirements, the member banks were possessed of sufficient funds to meet credit needs without resorting to rediscounting.[83] As we saw earlier, the problem really became one of endeavoring to stay the price advance. Furthermore, there was considerable prejudice against rediscounting. Bankers hesitated to disclose their borrowings to the public. Borrowed money or bills payable with the Reserve Banks appearing on the balance sheets would seem an element of weakness. Since the bankers needing funds could secure "credit from their city correspondents through methods which did not involve the direct obligations of their banks, and, therefore, did not appear as borrowed money, they were quite content to utilize the credit facilities of those city correspondents."[84] The correspondent relations had developed over a period of years, and the correspondent banks still held a portion of the reserve funds of member banks. As they were willing to loan money at low rates, it was but natural that bankers in need of funds for seasonal or other requirements obtained them from their correspondents rather than from the Reserve Banks. Finally, some bankers feared that the Reserve System might become their competitor. It would not be advisable, so they thought, to give support to the Regional Banks through rediscounts. Many looked upon the System as a government undertaking, whose transactions might become political in nature or involved in endless red tape.

Rediscount Privilege Made Use of by Small Banks. The rediscount privileges were for the most part made use of by small country institutions, particularly by those in the Southern states. The large banks that rediscounted with the Reserve Banks before April 1917, did so either out of courtesy, to keep the System in working order and to educate the banking community in the matter of rediscounts, or in a few cases, to realize a profit. For instance, one large bank retired its interest-bearing clearing-house certificates by rediscounting at a lower rate with a Federal Reserve Bank.[85]

[83] See *Second Annual Report of the Federal Reserve Board*, p. 4.

[84] Arthur Reynolds, *Early Functioning of the Federal Reserve System*, p. 75.

[85] Willis, *The New Banking System*, p. 603.

Bank Rates Charged on Commercial Paper. The Bank rates charged on rediscounts of paper maturing within ninety days are given below. The tendency to charge lower rates on paper of shorter maturities, and to equalize rates throughout the country, will be noted.

BANK RATES ON COMMERCIAL PAPER

	Maturity (in days)	*Boston*	*New York*	*Philadelphia*	*Cleveland*	*Richmond*	*Atlanta*	*Chicago*	*St. Louis*	*Minneapolis*	*Kansas City*	*Dallas*	*San Francisco*
Jan. 1, 1915	0–30	4½	4½	4½	5	5	5	4½	5	5	5	5	4½
	30–60	5	5	5	5½	5	5	5	5½	5½	5½	5	5½
	60–90	5	5	5	6	5½	5½	5½	6	6	6	5½	6
Jan. 1, 1916	0–10	3	3	3	3½	..	..	3½	3	..	3½	..	3
	0–30	4	4	4	4	4	4	4	4	4	4	4	3½
	30–60	4	4	4	4	4	4	4	4	4	4	4	4
	60–90	4	4	4	4½	4	4	4½	4	4½	4	4	4½
Jan. 1, 1917	0–10	3½	..	..	..	4	4	..	..	4	..	4	3
	0–15	..	3	3½	3½	4	4	3½	3½	4	4	4	..
	11–30	4	..	..	..	4	4	..	..	4	..	4	3½
	16–30	..	4	4	4	4	4	4	4	4	4½	4	..
	31–60	4	4	4	4½	4	4	4	4	4	4½	4	4
	61–90	4	4	4	4½	4	4	4½	4	4½	4½	4	4½

Commercial Paper Discounted Monthly by All Reserve Banks. The amounts of commercial paper discounted monthly by the Reserve Banks up to America's entrance into the war, are given in the following table:[87]

COMMERCIAL PAPER MATURING WITHIN NINETY DAYS DISCOUNTED BY THE FEDERAL RESERVE BANKS.

(Exclusive of agricultural paper maturing after ninety days, commodity paper and trade acceptances)

Date	*Amount*	*Date*	*Amount*
1914—Nov.	$ 9,820,900	1916—Jan.	$ 9,599,600
Dec.	10,946,300	Feb.	6,658,500
1915—Jan.	10,101,400	Mar.	8,184,300
Feb.	11,645,100	Apr.	9,754,200

[86] *First Annual Report of the Federal Reserve Board*, p. 203. *Second Annual Report of the Federal Reserve Board*, pp. 27–28. *Third Annual Report of the Federal Reserve Board*, pp. 35–37.

[87] Source—*Annual Reports of the Federal Reserve Board.*

Date	*Amount*	*Date*	*Amount*
1915—Mar.	$12,218,900	1916—May	$ 8,804,600
Apr.	8,906,300	Jun.	8,733,600
May	9,763,400	Jul.	18,358,300
Jun.	10,902,800	Aug.	16,308,600
Jul.	11,522,600	Sep.	13,348,400
Aug.	11,211,300	Oct.	11,011,400
Sep.	13,316,400	Nov.	17,019,300
Oct.	13,158,800	Dec.	63,271,800
Nov.	15,764,000	1917—Jan.	17,734,404
Dec.	13,158,000	Feb.	21,937,350
		Mar.	26,256,703

Total 1914—$ 20,767,200
Total 1915— 141,669,000
Total 1916— 191,052,600

Rediscounts High in December 1916 and in February and March 1917. Rediscounts for the period reached a maximum in December 1916, due to the unsettled conditions prevailing in the security and money markets at that time.[88] This condition particularly affected the Federal Reserve Banks of New York, Boston, Philadelphia and Chicago.[89] The larger amounts of commercial paper rediscounted during February and March of 1917 may be explained by several factors. The fact that the Bank rates at that time had fallen below the market, that prices were rising and that commercial banks were approaching the time when they could no longer expand on the basis of their own resources—all these induced member banks to expand on the basis of rediscounts with their respective Reserve Banks. The accompanying table shows the trend of the market and Bank rates in New York side by side with the upward movement of prices.[90]

Date	*Bank Rate* 61–90 *day paper*	*Market Rate* 60–90 *day paper*	*Wholesale prices*
1916—Oct.	4%	3.38%	136
Nov.	4	3.50	146
Dec.	4	3.91	149
1917—Jan.	4	3.55	153
Feb.	4	4.09	157
Mar.	4	4.13	162

88 See *The Financial Review*, 1917, pp. 63–70.

89 *Third Annual Report of the Federal Reserve Board*, p. 225.

90 For market rates, see *The Review of Economic Statistics*, 1919, p. 99. For wholesale prices, see *Monthly Labor Review*, July 1922, p. 61.

Commercial Paper Discounted by Each of the Reserve Banks. The amount of commercial paper (exclusive of agricultural and live-stock paper maturing after ninety days) discounted by each one of the Regional Banks, and its percentage to the total amount discounted is given below:[91]

Federal Reserve Bank of	*Amount of commercial paper discounted by each Bank*		*Per cent of amount rediscounted by each Bank to total*	
	Nov. 1914 *through* Dec. 1918	Total 1916	Nov. 1914 *through* Dec. 1915	Total 1916
Boston	$ 2,361,900	$33,919,100	1.45%	17.75%
New York	9,657,800	22,313,100	5.95	11.68
Philadelphia	6,800,600	22,285,400	4.18	11.66
Cleveland	4,857,200	6,645,800	2.99	3.48
Richmond	45,121,100	33,243,800	27.77	17.40
Atlanta	31,905,800	21,191,100	19.64	11.09
Chicago	11,961,600	20,228,700	7.36	10.59
St. Louis	7,616,400	8,403,400	4.69	4.40
Minneapolis	3,848,700	4,420,400	2.37	2.31
Kansas City	9,686,400	4,584,100	5.96	2.40
Dallas	21,101,700	12,248,500	12.94	6.41
San Francisco	7,517,000	1,569,200	4.63	.82
Total	$162,436,200	$191,052,600	100.	100.

Rediscounts Heaviest in the South. In the first period the largest volume of paper maturing within ninety days or under was rediscounted by the Federal Reserve Banks of Richmond, Atlanta and Dallas in the order named, and the smallest volume by Boston, Minneapolis and Cleveland. The demoralization of the cotton markets during the last months of 1914 and the first few months of 1915, and the frozen credits which resulted, forced many banks, especially the smaller ones, to rediscount a part of their portfolios with the Reserve Banks in the cotton districts.

During 1916, the Federal Reserve Banks of Boston, Richmond, New York, Philadelphia, Atlanta, Chicago and Dallas, in the order named, rediscounted the greatest volume of paper. The amounts rediscounted by the Reserve Banks of Boston, New York, Philadelphia and Chicago were large because of the enormous discounts during the troubled month of December at those banks.

[91] *Second Annual Report of the Federal Reserve Board*, pp. 66–67. *Third Annual Report of the Federal Reserve Board*, pp. 84–87.

COMMERCIAL PAPER MATURING WITHIN NINETY DAYS DISCOUNTED[92] BY THE FEDERAL RESERVE BANKS OF BOSTON, NEW YORK, PHILADELPHIA AND CHICAGO.

Federal Reserve Bank of	*December*, 1916	*Total* 1916
Boston	$14,810,100	$33 919,100
New York	17,978,000	22,313,100
Philadelphia	11,911,400	22,285,400
Chicago	5,625,800	20,228,700

The fact that Bank rates in the southern districts ruled below market rates, especially line of credit rates, was probably a factor in increasing rediscounting at the southern Reserve Banks.

Maturities of Commercial Paper Discounted. Through November and December of 1914, the average life of paper maturing within ninety days was thirty days or under; in 1915, it ranged from thirty to sixty days; and in 1916, from ten to thirty days. The shorter maturity of the paper in 1916 seems to have been caused by the increasing strain on the money market, and the gradual depletion of the resources of commercial banks, forcing them to borrow for short periods to meet adverse clearing-house balances.[93]

MATURITY OF COMMERCIAL PAPER[94]

Paper maturing	1914	1915	1916
Within 10 days	.....	$ 1,231,800	$45,059,200
Within 30 days	$12,380,700	.....	.....
From 10–30 "	.....	25,277,400	69,993,900
From 30–60 "	5,180,000	57,837,400	34,422,900
From 60–90 "	3,206,500	57,322,400	41,576,600

Special Rates on Ten-day Paper. It will be noticed in the table given above, that during 1915 and 1916 some of the paper is classified as maturing within ten days. Special rates of 3% for such paper were approved by the Board and established on June 25, 1915, at the Federal Reserve Banks of New York, Philadelphia, St. Louis and San Francisco in order to enable the larger member banks to meet demands for short-time pay-

[92] *Third Annual Report of the Federal Reserve Board*, pp. 88–89.

[93] See Reed, *The Development of Federal Reserve Policy*, p. 253.

[94] See *Second Annual Report of the Federal Reserve Board*, pp. 66–67. *Third Annual Report of the Federal Reserve Board*, pp. 84–87.

ments, such as the payment of heavy debit balances at the clearing house, or the replenishment of their legal reserves.[95] By January 1, 1916, special rates on such paper had been established at eight of the Reserve Banks.

Advances to Member Banks. The approval, on September 7, 1916, of the amendment to the Act permitting fifteen-day advances on the notes of member banks, brought about the abandonment of these special ten-day rates. The passage of this amendment had been recommended by the Board in its *Second Annual Report* (page 22), as a convenience to large city banks temporarily in need of funds. With this change they would be enabled to borrow on their own portfolios as collateral without the knowledge of their customers, and at the same time save the Reserve Banks the arduous labor of computing the interest charge on each of a large number of small items. On September 11, 1916, for the first time, a special discount rate of 4% was established at the Federal Reserve Bank of Richmond for member banks' collateral notes. By October 6, rates covering this type of paper had been established at all of the Reserve Banks.

The advances made on collateraled notes of the member banks during the last four months of 1916 amounted to $38,967,447,[96] of which $27,001,168 had been advanced by the Federal Reserve Banks of New York, Chicago and Philadelphia. During the first three months of 1917, the advances so made totalled $31,622,920, of which the Federal Reserve Banks in the larger financial centers, Boston, New York, Philadelphia and Chicago, advanced $10,125,934.[97]

Rates Charged on Advances. The rates of discount on advances in effect on January 1, 1917, ranged from 3 to 4% at the Reserve Banks as shown by the following table:[98]

Federal Reserve Bank of	*Rate*
Boston	4%
New York	3
Philadelphia	3½
Cleveland	3½

[95] See *Federal Reserve Bulletin*, 1915, p. 124, and *Second Annual Report of the Federal Reserve Board*, p. 295.

[96] *Third Annual Report of the Federal Reserve Board*, p. 90.

Of the $38,967,447 advanced during these four months, $32,269,900 was advanced during the month of December, when the security and commodity markets were unsettled by the peace developments.

[97] *Fourth Annual Report of the Federal Reserve Board*, p. 101.

[98] *Ibid.*, p. 37.

Federal Reserve Bank of	*Rate*
Richmond	3½
Atlanta	3½
Chicago	3½
St. Louis	3½
Minneapolis	4
Kansas City	4
Dallas	3½
San Francisco	4

At eight of the Banks, these rates were the same as those prevailing for rediscounts of eligible paper maturing within fifteen days. At Richmond, Atlanta and Dallas the rate on advances was ½ of 1% lower than on rediscounts.

This amendment had the unexpected effect of permitting the member banks during the war to borrow huge sums at the Reserve Banks on the basis of their notes collateraled by government obligations. At the time the amendment was passed, the interest-bearing public debt amounted to only $970,000,000 of which $675,000,000 had been used for the issuance of national bank notes. The sponsors of this amendment could scarcely have been expected to look forward to the time when extensions of credit on member banks' promissory notes by the Reserve Banks would play such a prominent part in the financing of the war.

The Discounting of Agricultural Paper. The original Federal Reserve Act, it will be remembered, conferred upon the Board power to limit to a percentage of the capital of the Reserve Banks the amount of notes, drafts or bills of exchange drawn or issued for agricultural or live stock transactions, having a maturity not in excess of six months, which might be discounted by each. On November 10, 1914, the Board ruled that such paper might be rediscounted by the Regional Banks to an amount not to exceed 25% of the paid-in capital of each.[99] This ruling was changed from time to time so as to increase the percentage of agricultural paper which might be discounted until finally the Banks were granted the authority to discount an amount not in excess of 99% of their capital stock.[100] By an amendment approved on September 7, 1916, this section of the Act was altered to permit rediscounts of agricultural paper up to a certain percentage of the total assets of a Reserve Bank, instead of up to a certain percentage of its capital. The result is that at the present time there is practically no limit to the amount of agricultural paper (maturing within six months) which Reserve

[99] *First Annual Report of the Federal Reserve Board*, p. 61.

[100] *Federal Reserve Bulletin*, 1916, p. 68.

Banks may rediscount, as it may amount, by rulings of the Board, to 99% of a Reserve Bank's total assets.[101]

Rediscounts of agricultural paper in 1914 and 1915 amounted to $20,327,800, an amount equal to 10.4% of all rediscounts in those years. In 1916, $16,817,900 of agricultural paper was rediscounted, which amounted to 6.4% of all rediscounts. The smaller amount rediscounted in 1916 may be accounted for by the rise in agricultural prices which induced farmers to dispose of their crops promptly.[102]

In the following table there is given the percentage of agricultural paper rediscounted by each Regional Bank relative to the total amount of agricultural paper rediscounted by all the Banks:[103]

Federal Reserve Bank of	*Percentage to total*	
	1915	1916
Boston	.1%	....
New York	....	.1%
Philadelphia	.2	.3
Cleveland	1.6	.9
Richmond	9.7	6.7
Atlanta	17.3	6.7
Chicago	12.5	17.6
St. Louis	3.1	2.6
Minneapolis	10.0	12.2
Kansas City	8.7	13.3
Dallas	32.8	37.2
San Francisco	4.0	2.4
Total	100.0	100.0

In both 1915 and 1916 the Dallas Bank led in rediscounts of this type of paper. Rediscounts of agricultural paper were also heavy at the Federal Reserve Banks of Atlanta, Chicago, and Minneapolis.

Bank Rates on Agricultural Paper. The discount rates on agricultural paper in effect on January 1, 1916, and on January 1, 1917, are given in an accompanying table. These have ranged

RATES ON AGRICULTURAL PAPER[104]

Federal Reserve Bank of	Jan. 1, 1916	Jan. 1, 1917
Boston	5%	5%
New York	5	5
Philadelphia	4½	4½

[101] Letter to author from W. P. G. Harding.
[102] See Wright, *Bank Credit and Agriculture*, p. 151.
[103] *Third Annual Report of the Federal Reserve Board*, p. 88.
[104] *Ibid.*, p. 37.

Federal Reserve Bank of	Jan. 1, 1916	Jan. 1, 1917
Cleveland	5%	5%
Richmond	5	4½
Atlanta	5	5
Chicago	5	5
St. Louis	5	4½
Minneapolis	5	5
Kansas City	5	5
Dallas	4½	4½
San Francisco	6	5½

from ½ of 1% to 1% above rates on sixty to ninety day paper, which is as it should be, considering the nature and maturity of the paper. Although the rates charged by the various Reserve Banks on agricultural paper did rule above rates on sixty to ninety day commercial paper, they bore little relationship to actual market conditions in the several districts. Can there be any reasonable explanation of the fact that on January 1, 1916, a 4½% rate was charged at Dallas, while 6% was charged by the San Francisco Reserve Bank, especially in view of the fact that Dallas in 1915 rediscounted 32.8% of all the agricultural paper rediscounted at the Federal Reserve Banks, while the Federal Reserve Bank of San Francisco rediscounted but 4% of the total, and in view of the fact that market rates ruled higher in the Dallas district than in the San Francisco district. Why, on January 1, 1917, should the rates at Dallas and Richmond have been 4½% while the rates at New York and Boston on similar paper were 5%? The 4½% rates at Richmond and Dallas bore no relationship to the rates prevailing in the market. By what process of reasoning did the Board and the Directors of the Regional Banks set those rates? If it were their desire to grant cheap accommodation to agriculturists, instead of setting the rate at 4½% why did they not fix it at 3, or 2 or 1 or 0%? It would have been as logical.

Summary of Federal Reserve Attitude towards Agricultural Paper. In reviewing the attitude of the Banks and of the Board towards agricultural paper, one is immediately struck by the liberality of the System. There was no discrimination against the farmer. The Board, through its rulings and regulations, defined agricultural paper in a very broad manner.[105] The act was amended so that the Regional Banks might rediscount such paper up to a certain percentage of their total assets instead of to a certain percentage of their capital. This amendment was passed

[105] See Reed, *The Development of Federal Reserve Policy*, Chapter VII.

to appease agricultural interests. It was a dangerous one in that it permitted the Regional Banks to invest a greater amount in long-term paper, a course which if carried to an extreme, as it might well be if the agricultural interests demanded, would tie up the resources of the Reserve Banks. Far from discriminating against the farmer, the System specially favored him—favored him without greatly aiding him, for with the resumption of international trade and the increase of exports the farmer needed little assistance. The extraordinary privileges granted to the farmer would have been of little importance if they had not wrought actual harm in establishing dangerous precedents.

Commodity Paper Rates. Not only was the farmer favored by the Board by liberal definitions of agricultural paper and by the amendment to the Act cited above, but in addition Secretary McAdoo for political reasons saw fit to have established preferential rates on commodity paper maturing within ninety days time. The reasons for establishing these rates the Board explains in the following terms: "Because of the difficult international conditions, the Federal Reserve Board early in the summer [of 1915] felt that it would be advisable to be prepared for any contingency that might arise in connection with the marketing of the cotton crop. Fears for the situation were widespread in the South, some pessimistic observers predicting a repetition of the disastrous experiences of 1914. The Board, therefore, in June, 1915, appointed a special committee to study the condition and needs of the cotton-growing districts." [106] This committee made a study of warehouse facilities in the southern states and of laws governing warehousing in order to determine whether such facilities were adequate to permit a gradual and orderly marketing of the crop and so eliminate seasonal fluctuations in prices. The conclusion was reached that the storage facilities for that portion of the crop which might have to be carried over were adequate and further that the crop would be much smaller than the one the previous year, as the acreage devoted to cotton had been materially reduced. The recommendation was made by the committee that some special form of accommodation be created to assist the producers who wished to withhold a portion of their crops temporarily from the market.

Cotton Declared a Contraband of War. The anouncement by the British Government and the Allies declaring cotton con-

[106] *Second Annual Report of the Federal Reserve Board*, p. 7.

traband of war in August 1915, accelerated considerably the movement already on foot to assist the cotton planters, as it was feared that this action would narrow the market for cotton and depress its price. Secretary McAdoo announced on August 23, 1915, that he intended to deposit $30,000,000 in gold in the Federal Reserve Banks of Atlanta, Dallas and Richmond so that those banks might be assured of sufficient resources to rediscount all paper secured by cotton stored in warehouses.[107] On September 3, 1915, the Board issued its first regulation governing commodity paper.[108] Such paper was defined as a note, draft, or bill of exchange secured by warehouse or terminal receipts or by shipping documents covering approved and readily marketable non-perishable staples properly insured.[109] The Board authorized a special rate of 3% on such paper provided that the rate of interest, including all commissions, charged the maker by member banks did not exceed 6% per annum. The Federal Reserve Bank of Atlanta was the first to establish, on September 4, a special rate of 3%. While the commodity paper regulation was intended to assist the cotton planter particularly, the term commodity was almost immediately enlarged to include grains, wool, sugar, and other staples.[110]

Deposits by the Secretary of the Treasury. Between the 4th and the 7th of September, the Secretary of the Treasury

[107] See *Annual Report of the Secretary of the Treasury on the State of the Finances*, 1915, pp. 4–6.

[108] *Second Annual Report of the Federal Reserve Board*, p. 7.

[109] *Federal Reserve Bulletin*, 1915, p. 310, and 1916, p. 523.

[110] Declaring cotton a contraband of war had little effect on its price as is shown by the following table:

WHOLESALE CASH PRICE OF COTTON—MIDDLING UPLANDS—NEW YORK

Price per pound

	1915	1916
Jan.	8.28 cents	12.40 cents
Feb.	8.54	11.74
Mar.	8.99	11.94
Apr.	10.29	12.06
May	9.84	12.91
June	9.67	12.94
July	9.20	13.04
Aug.	9.38	14.54
Sep.	10.98	15.84
Oct.	12.50	18.12
Nov.	11.89	20.06
Dec.	12.36	18.24

(Courtesy of Statistics Department, Federal Reserve Bank of New York.)

deposited $5,000,000 in each of the three southern Reserve Banks with the stipulation that it be used in rediscounting commodity paper.[111] These funds were in fact the first deposits in any Reserve Bank by the Government. In response to an inquiry from the Treasury Department, the Reserve Banks of Kansas City, St. Louis and Minneapolis replied that they possessed sufficient funds themselves to finance the farmers without having to depend on Government deposits.[112]

Commodity Paper Rates. Special rates on commodity paper were in force until the last two months of 1917, when those which had been established were merged with the rates on commercial paper of corresponding maturities. The rates charged, as shown in the following table, varied from 3 to 4½%, ranging from 1 to 3% below those charged on agricultural paper maturing after ninety days.

RATES ON COMMODITY PAPER MATURING WITHIN NINETY DAYS [113]

Federal Reserve Bank of		Jan. 1, 1916	Jan. 1, 1917
Boston		3½%	4%
New York		..	..
Philadelphia		3	3½
Cleveland		..	..
Richmond		3	3½
Atlanta		3	3
Chicago		..	..
St. Louis		3	3½
Minneapolis		3	3½
Kansas City		3	4
Dallas		3	3
San Francisco	To 30 days	3½	..
	31–60 days	4	..
	61–90 days	4½	..

Discounts of Commodity Paper. The amount of commodity paper discounted by each one of the Regional Banks follows: [114]

[111] *Federal Reserve Bulletin*, 1915, p. 301. The deposit of these funds in the southern Banks was attacked by James B. Forgan in the following terms: "There was nothing in the financial condition of the country either calling for or warranting such a transaction. . . . This was a blunder, the explanation of which must, I fear, be looked for in the realm of politics." *Commercial and Financial Chronicle*, January 1, 1916, p. 17.

[112] *Federal Reserve Bulletin*, 1915, pp. 302–303.

[113] *Third Annual Report of the Federal Reserve Board*, p. 39.

[114] *Ibid.*, p. 91 and *Fourth Annual Report of the Federal Reserve Board*, p. 103.

Federal Reserve Bank of	1915 Sept. 8–Dec. 31	1916	1917 Jan.–Nov.
Boston	.....	.....	.....
New York	.....	.....	$ 25,000
Philadelphia	.....	.....	105,200
Cleveland	.....	.....	131,600
Richmond	$ 2,881,400	$ 7,025,800	3,686,085
Atlanta	7,032,300	7,500,400	5,438,819
Chicago	.....	.....	.....
St. Louis	99,800	1,534,000	427,278
Minneapolis	25,300	19,800	121,670
Kansas City	.....	360,000	196,667
Dallas	239,000	225,200	289,896
San Francisco	37,200	148,000	822,296
Total	$10,315,000	$16,813,200	$11,244,271

Little Paper Discounted at Commodity Rates. Despite optimistic utterances on the part of John Skelton Williams that the commodity rate worked admirably and enabled farmers to borrow at 6% where they had formerly been charged 10, 12, or 15% [115] only a trifling amount of such paper was rediscounted at the Regional Banks.[116] During the whole period the commodity rates were in force, only $38,372,421 of commodity paper was rediscounted at the Reserve Banks, of which sum $19,971,519 was discounted by the Bank of Atlanta, and $13,593,283 by the Bank of Richmond. In other words, these two banks discounted approximately 87% of the whole amount. The banking institutions throughout the farming communities were in general possessed of sufficient resources and were not compelled to rediscount commodity paper with the Regional Banks. The commodity rate had been intended to enable the cotton planter to hold his crop until such a time as it could be marketed in an orderly fashion, but the rising prices of agricultural products and the general and sustained demands for them induced planters and farmers to dispose of their crops as soon as harvested. The five millions of dollars which the Secretary of the Treasury

[115] The statement of John Skelton Williams follows: "This arrangement resulted, in many parts of the country, in giving farmers the opportunity of borrowing money at 6%, where for years they had been accustomed to paying 10, 12 or 15%, and in many cases rates still more exorbitant." *Commercial and Financial Chronicle*, Sept. 2, 1916, p. 809.

[116] *Second Annual Report of the Federal Reserve Board*, pp. 354 and 419.

deposited in each of the southern Reserve Banks, which was heralded far and wide as a harbinger of a new day for the planter, accomplished nothing. The southern Banks did not need the money. Their own resources were sufficient to take care of the needs of the planters.

Harm Done by Commodity Rates. The establishment of the commodity rates wrought actual harm in that they accustomed some bankers to feel that they should always be able to discount at a profit, that the credit furnished by Reserve Banks to member banks is analogous to merchandise sold by wholesalers to retailers. No doctrine could be more fallacious. In the first place, the Reserve Banks supply but a small portion of the credit required by the nation. In the second place, the credit supplied by the Reserve Banks, unlike merchandise supplied by wholesalers, becomes the basis of still larger extensions of credit by the member banks.

Furthermore, why indeed should lower rates be established on paper representing goods in storage than on paper evidencing the production and marketing of goods? The resources of the Reserve System ought not to be used to enable any one class in the community to hold its products for higher prices at the expense of other classes, except in so far as the holding of the goods is with the intent of wiping out seasonal variations in prices. The accomplishment of this, however, does not justify the establishment of *preferential* rates. Again, the preferential rates which were established on commodity paper like the rates on agricultural paper, bore no relationship to actual market conditions or to the expense involved in granting such loans.

In conclusion, it may be noted that the establishment of the commodity rates did not materially aid farmers and planters. The low Bank rates established were not passed on by member banks to their customers. A dangerous precedent was established in accustoming commercial bankers to discount at a profit and to feel that this normally should be the case.[117]

Act Framed to Encourage Trade Acceptances. It was the evident purpose of the framers of the Federal Reserve Act to encourage the use of the trade acceptance in commercial trans-

[117] The Board contended that the psychological effect of establishing the commodity rate was good. See *Second Annual Report of the Federal Reserve Board*, p. 243.

W. P. G. Harding, then Governor of the Federal Reserve Board, justified the establishment of the commodity rates in the following terms: "In my opinion the Secretary of the Treasury, who was born and reared in

actions in the United States. They had been largely used on the continent of Europe and had been employed in America before the Civil War. It was hoped that they might be restored to favor. Besides being admitted to rediscount under Section 13 of the Act, as were promissory notes, trade acceptances could be purchased in the open market by the Regional Banks under Section 14. The same privilege was not granted to promissory notes. "It was held that the purchase of . . . single name paper might expose the Federal Reserve Banks to some hazard, for they would not be in as good a position to judge the paper as the member banks themselves, and therefore might from time to time take paper which was not thoroughly satisfactory." [118]

It was not until July 15, 1915, when special regulations were issued (Regulation P, Series of 1915), that the trade acceptance

the South and is familiar with the Southern temperament, felt that by announcing his intention to deposit Government funds with Southern banks to assist in moving the cotton crop, simultaneously with Great Britain's declaration of contraband against cotton, he was availing himself of the psychological moment for restoring confidence, and the members of the Federal Reserve Board felt that in issuing the commodity regulations which are entirely independent of the Secretary's action in depositing Government funds, that they would prove to the Southern farmer the disposition of the Federal Reserve banks to render aid; while the Secretary, by making these deposits, convinced the farmer of the ability of the banks to carry out their good intentions.

"It was evident two months ago that unless something was done to stimulate the holders and producers of cotton, the market this fall would be altogether in favor of the buyers, regardless of the plethora of money held by the banks and the unusually low rate of interest rates at which money could be obtained, and in spite of reports from cotton producing sections throughout the world, which indicated that the available supply of cotton during the next twelve months would not be out of proportion to the world's requirements.

"The regulation of the Federal Reserve Board, by granting preferential discount rates to notes secured by warehouse or terminal receipts for cotton, grain or other staple commodities, provided the maker has been charged not more than 6% interest for discounts, has been severely criticized by some of the financial journals. The action of the Secretary of the Treasury in depositing Government funds with some of the Federal Reserve banks has also been condemned.

"He has undoubtedly legal right to make deposits with the Federal Reserve banks. He cannot be charged with discrimination in favor of any one section, for his critics contend that no Government deposits are needed anywhere and he has, as a matter of fact, offered to deposit Treasury funds with Federal Reserve banks of other sections, which deposits have been declined.

"I fully agree that from a purely banking standpoint, and eliminating all other considerations, the deposits were not essential. The situation

was recognized as a distinct class of commercial paper.[119] In an explanation accompanying this regulation (Circular No. 16, Series of 1915) [120] the Board employed the term "trade acceptance" and declared that it was ready to approve of a preferential rate on this type of paper. In promulgating the regulation, the Board expressed the belief that the Federal Reserve System would assist "in developing a class of double-name paper, which has shown itself in so many countries a desirable form of investment and an important factor in modern commercial banking systems." In accordance with the regulations issued, the Federal Reserve Banks commenced to institute preferential rates for trade acceptances. The Federal Reserve Bank of New York was the first to establish, on July 22, 1915, a special rate of 3½% on trade acceptances maturing within ninety days. The other banks soon followed suit. The rates established were in general from ½ to 1½% below rates on commercial paper of corresponding maturities.

RATES ON TRADE ACCEPTANCES [121]

Federal Reserve Bank of	*January* 1, 1916			*January* 1, 1917		
	To 30 *days*	31–60	61–90	*To* 30 *days*	31–60	61–90
Boston	3½%	3½%	3½%	3½%	3½%	3½%
New York	3½*	3½	3½	3½	3½	3½
Philadelphia	3	3	3	3½	3½	3½
Cleveland	3½	3½	4	3	3½	4

as a banking proposition could have been cared for by the Southern Reserve banks, either by an expansion of their note-issues or by re-discounting with other Federal Reserve banks, but the human equation has to be reckoned with, particularly when it comes to dealings with Southern farmers.

"The Federal Reserve system is still new. The farmer has yet to become acquainted with it and to learn and appreciate its value. On the other hand, he knows about the Government of the United States. His grandfather and his father fought for it and against it, and he himself has profound respect for Federal law and an abiding faith in the ability of the United States Treasury to relieve all financial troubles." *Commercial and Financial Chronicle*, September 25, 1915, p. 979.

[118] Steiner, *The Mechanism of Commercial Credit*, p. 117.

[119] *Federal Reserve Bulletin*, 1915, p. 217.

[120] *Ibid.*, p. 216.

[121] *Third Annual Report of the Federal Reserve Board*, pp. 38 and 39.

Federal Reserve Bank of	*January* 1, 1916			*January* 1, 1917		
Richmond	3½	3½	4	3½	3½	3½
Atlanta	3½	3½	3½	3½	3½	3½
Chicago	...	...	...	3½	3½	3½
St. Louis	3½	3½	3½	3	3	3½
Minneapolis	...	...	...	3½	3½	3½
Kansas City	3½	3½	3½	4	4	4
Dallas	3½	3½	4	3½	3½	3½
San Francisco	3	3	3½	3	3	3½

* To 15 days, 3%.

Amount of Trade Acceptances Discounted. Although the use of the trade acceptance was encouraged by officials of the System,[122] the movement by no means made the headway its supporters had hoped for. In the following table the amounts discounted by each of the Federal Reserve Banks are given:[123]

TRADE ACCEPTANCES DISCOUNTED

Federal Reserve Bank of	1915 Sept. 2–Dec. 31	1916	1917 Jan.–Mar.
Boston	.....	$ 429,200	$ 623,336
New York	$ 5,700	166,600	.....
Philadelphia	.....	74,800	66,615
Cleveland	4,900	175,200	1,797
Richmond	450,500	1,509,200	527,711
Atlanta	1,007,100	1,591,000	690,904
Chicago	.....	105,200	8,609
St. Louis	167,800	626,200	64,586
Minneapolis	.....	41,700	65,941

[122] See Willis, *The New Banking System*, p. 596.

The Federal Reserve Bank of Cleveland stated: "There can be no question of the desirability of developing this class of credits in the United States, in the interests of banking, commerce, and industry. In all modern banking systems, the acceptance is the most desirable form of investment, and it is the most satisfactory method of settlement in the business world." *Federal Reserve Bulletin*, 1916, p. 100.

[123] See *Federal Reserve Bulletin*, 1917, p. 8, for report of a Committee of Federal Reserve Agents on this subject, also Steiner, *The Mechanism of Commercial Credit*, Chs. 7, 8, 9, and 10. For amount of trade acceptances discounted, see *Third Annual Report of the Federal Reserve Board*, p. 90, and *Fourth Annual Report of the Federal Reserve Board*, p. 103.

Federal Reserve Bank of	1915 Sept. 2–Dec. 31	1916	1917 Jan.–Mar.
Kansas City	$ 87,800	$190,900	.....
Dallas	160,800	248,900	$120,028
San Francisco	74,200	53,400	23,835
Total	$1,958,800	$5,212,300	$2,193,362

Up to the time that America entered the war, only $9,364,462 of trade acceptances had been discounted, and of this amount $7,164,729 had been discounted by the Federal Reserve Banks of Richmond, Atlanta, Dallas and St. Louis. The Reserve Banks located in the financial centers of the country, New York, Boston, Philadelphia, Cleveland, Chicago and San Francisco, discounted during this period but $1,813,392. These figures do not of course include the trade acceptances purchased by the Reserve Banks in the open market, which in 1915 amounted to about $31,000 and in 1916 to $16,332,700. In 1916, the trade acceptances discounted and purchased by the Reserve Banks amounted to but 8% of all classes of paper discounted by them.[124] From this data it will appear that the trade acceptance, in spite of the preferential rates, played but an unimportant rôle in the portfolios of the Reserve Banks, and in all probability a rôle of even less importance in the portfolios of the member banks.

Trade Acceptance Movement Developed Slowly. One does not have to possess the wisdom of the Delphic Oracle to realize that the trade acceptance movement had not grown with any startling rapidity, and that the cash discount system was still employed by the great majority of American firms. Opposition to the use of the trade acceptance had not been absent at any time. It was present when the Act was being framed.[125] The most influential opponents seem to have been the wholesalers. Keen as is the competition among them, they could not afford to displease their customers by requiring them to accept a time bill of exchange instead of offering them the usual cash discount. In fact, so adverse is the feeling among many business men toward trade acceptances, and so well suited is the present cash discount system to many lines, that in all probability the trade accept-

[124] "All classes of paper discounted" includes all paper maturing within ninety days, agricultural and live-stock paper, advances, trade acceptances and commodity paper.

[125] Steiner, *The Mechanism of Commercial Credit*, p. 130.

ance will be relegated to the rather ignominious rôle of being drawn against the weaker purchasers or against those who demand the longest credit period. It has been asserted that 90% of the trade acceptances are drawn to force collections.[126] The strongest buyers take advantage of the cash discount.

The trade acceptance did not become the prime commercial paper that the officials of the System had hoped. Generally speaking, acceptances were drawn against the weaker buyers, those who delayed payment longest and whose accounts had oftenest to be renewed. Bankers were inclined to purchase acceptances without investigating carefully the credit standing of the drawer and of the drawee, placing too much emphasis on the form of the commercial paper and not enough on the underlying transaction. Subterfuges were resorted to by some firms to enable the drawing of trade acceptances, such as the organization of subsidiary sales organizations to act as acceptors of the drafts.[127]

Preferential Rates on Trade Acceptances Not Warranted. Preferential rates should have applied only to those trade acceptances of unsullied reputation, drawn by sellers of good credit standing on strong buyers against a bona-fide sale of goods. The Reserve Banks should have carefully scrutinized the trade acceptances presented for discount and admitted only those that were actually prime pieces of paper. This was not done. There is no particular virtue in the trade acceptance as such.[128] A promissory note may be equally as liquid, if it arises in connection with commercial operations, and may be equally as suitable for the basis of an elastic currency fluctuating with business needs. In fact, promissory notes, the proceeds of which have been used in bona-fide commercial transactions and which have been signed by makers of stronge credit standing are much to be preferred in the portfolio of a Reserve Bank to weak trade acceptances. The preferential rates should have applied only to those trade acceptances that were prime pieces of paper. Inasmuch as the majority were not such before 1917, the establishment of preferential rates by the Regional Banks was unwarranted.[129]

Summary of Loan and Rediscount Operations. The redis-

[126] Steiner, *The Mechanism of Commercial Credit*, p. 170.

[127] Reed, *The Development of Federal Reserve Policy*, p. 121.

[128] Sprague, *Commercial Paper and Federal Reserve Banks*, p. 442.

[129] Through its open-market operations the Board could have encouraged the use of prime trade acceptances.

count operations of all the Reserve Banks, save those located in the southern districts, were quite small prior to April of 1917. In 1914 and 1915, discounts amounted to but $195,037,800, and in 1916, to $268,863,447. By reason of the large gold imports and the lowering of the reserve requirements, member banks on the whole were possessed of sufficient funds so that they were not compelled to borrow at the Reserve Banks in order to finance their customers. So small were rediscounts that the Federal Reserve Banks could not have met their expenses had they been forced to rely on income from bills discounted as their only source. In 1914 and 1915, this amounted to only $1,218,516, and in 1916, to $1,025,675, while the current expenses of the Banks amounted in 1914 and 1915 to $1,677,639, and in 1916 to $2,204,344.[130] As noted before, the greater part of the paper discounted prior to January 1, 1915, matured from thirty to sixty days, and during 1916, from ten to thirty days. The average size of bills discounted in 1916 was $2725.[131] In all, four hundred seventy-one banks rediscounted during November and December, 1914, and 1920 rediscounted in 1915. Of the 1920 banks which rediscounted during 1915, 1234 were located in the Federal Reserve districts of Dallas, Kansas City, Atlanta, Richmond and Chicago.[132] In 1916, 1788 banks rediscounted, of which 1113 were located in these same Reserve districts.[133] In both 1915 and 1916, the Dallas Bank led in the number of member banks accommodated. The number of banks which rediscounted during each month of 1915 and 1916, and the percentage relation of this number to the total number of member banks, is given below:[134]

		Jan.	*Feb.*	*Mar.*	*Apr.*	*May*	*June*
1915	(1) Banks Rediscounting	398	469	570	606	693	813
	(2) Total Member Banks	7609	7618	7614	7622	7623	7624
	(3) Percentage of (1) to (2)	5.2	6.2	7.5	7.9	9.1	10.7
1916	(1) Banks Rediscounting	614	451	535	606	655	678
	(2) Total Member Banks	7649	7643	7639	7631	7606	7621
	(3) Percentage of (1) to (2)	8.0	5.9	7.0	7.9	8.6	8.9

[130] *Second Annual Report of the Federal Reserve Board*, pp. 89–90. *Third Annual Report of the Federal Reserve Board*, pp. 117–119.

[131] Comparable data for 1914 and 1915 are lacking.

[132] *Second Annual Report of the Federal Reserve Board*, p. 71.

[133] *Third Annual Report of the Federal Reserve Board*, p. 93.

[134] *Ibid.*, p. 93.

		July	*Aug.*	*Sept.*	*Oct.*	*Nov.*	*Dec.*
1915	(1) Banks Rediscounting	760	711	761	794	835	754
	(2) Total Member Banks	7625	7640	7650	7655	7655	7646
	(3) Percentage of (1) to (2)	9.9	9.3	9.9	10.4	10,9	9,9
1916	(1) Banks Rediscounting	642	483	448	383	336	314
	(2) Total Member Banks	7621	7618	7624	7626	7628	7627
	(3) Percentage of (1) to (2)	8.4	6.3	5.9	5.0	4.4	4.1

During 1915 and 1916, the average number of member banks rediscounting each month equaled 7.8% of the total membership.

The data which have been presented are proof that the resources of the Federal Reserve Banks of Dallas, Atlanta and Richmond were most severely tested prior to America's entrance into the war. The accommodation which they granted was extended for the most part to the smaller member bank. Although the southern Reserve Banks rediscounted heavily, they were not compelled to borrow funds from the other Reserve Banks. Before April, 1917 there was no interdistrict rediscounting.[135]

The experience of the pre-war years seems to indicate that the Federal Reserve Banks may be divided into two groups, those in districts whose resources are required primarily for the meeting of local needs, seasonal and otherwise, and those in districts whose resources are more than sufficient for local requirements alone. Rediscount operations will probably absorb the whole attention of the Banks in the first group, while those in the second can devote some attention to problems related to the development of a discount market, to fluctuations in the foreign exchanges, gold movements, etc. The first group would include the Federal Reserve Banks of Dallas, Atlanta, Richmond, St. Louis, Kansas City, and Minneapolis. These are located in borrowing sections. The second group would include the Reserve Banks of Boston, New York, Philadelphia, Cleveland, Chicago and San Francisco. These are located in the creditor districts and in addition to meeting local needs, their resources will

[135] On March 10, 1915, the Federal Reserve Board established a rate of 3½% for paper maturing within thirty days, and 4% for paper maturing after thirty days but within ninety days when rediscounted by one Federal Reserve Bank with another. These rates were changed on May 29, 1917, to 3% for paper maturing up to ninety days. No rediscount transactions were consummated, however, until December, 1917. (*Discount Rates of the Federal Reserve Banks, 1914–1921*, p. 30. Washington, Government Printing Office, 1922.)

permit them to engage in open-market operations as the occasion demands.

Open-market Operations before April, 1917. The reasons for permitting the Reserve Banks to engage in open-market operations have been indicated elsewhere.[136] The inability of the Reserve Banks, excepting those located in the South, to meet their current expenses through 1915 and 1916 by earnings on bills discounted, forced them to invest a portion of their funds in the open market; in warrants, bonds, and acceptances. This the Federal Reserve Board had advised them to do to an extent necessary to pay their expenses. Beyond such a point the Board held that the Reserve Banks should not invest their funds, for to do so would only swell the already abundant funds in the market and to that extent raise the price level.[137]

The Purchase of Municipal Warrants. In a special regulation issued on January 26, 1915 (Regulation F, Series of 1915), the Federal Reserve Board defined in some detail those warrants which should be eligible for purchase by the Reserve Banks.[138] In a circular which accompanied this regulation,[139] the Board instructed the Banks to invest normally only a small portion of their resources in this manner. The larger portion should be reserved for the discounting of commercial paper. "In any and all cases the interest of the Federal reserve banks rather than that of the municipalities desiring to sell their obligations should be the primary consideration in making such investments." Furthermore, the Board advised that a preference should be shown for those warrants which were most readily marketable, in order that the Reserve Banks might rapidly increase their cash position when necessary. No warrants were to be purchased except those issued for short periods in anticipation of assured revenues.[140]

In order to help meet expenses, the Reserve Banks therefore

[136] See pages 115–117.

[137] *First Annual Report of the Federal Reserve Board*, p. 18. *Second Annual Report of the Federal Reserve Board*, pp. 4, 6 and 20.

[138] *Federal Reserve Bulletin*, 1915, p. 40.

Though this regulation was not issued until January 26, 1915, the Minneapolis Bank purchased $677,000 of municipal warrants in December, 1914. (*Second Annual Report of the Federal Reserve Board*, p. 75.) This purchase was effected after correspondence and personal conferences between the officials of the Bank and members of the Board. (Letter from Edmund Platt to author, dated January 19, 1923.)

[139] *Federal Reserve Bulletin*, 1915, p. 39.

[140] For the most recent regulations governing the purchase of municipal warrants, see pages 171–173.

invested during 1915 and 1916, $156,545,300 in warrants, an average of $6,522,721 a month.[141] In 1915, as the accompanying table shows, the Federal Reserve Banks of New York, Boston, Philadelphia, Cleveland and Chicago purchased 86% of the whole, and in 1916, 81.8%. The Banks of Dallas, Atlanta and Richmond, in 1915, bought only 1.3% of all warrants purchased, and in 1916, but .8 of 1%. The heavy rediscounts at those Banks rendered it unnecessary for them to purchase municipal warrants as a means of meeting their operating expenses.[142]

PURCHASES OF MUNICIPAL WARRANTS [143]

Federal Reserve Bank of	*Amount* 1915	1916	*Per cent. of whole* 1915	1916
Boston	$ 8,259,900	$ 7,621,600	12.6%	8.4%
New York	26,465,400	38,432,300	40.2	42.4
Philadelphia	7,399,800	7,823,000	11.2	8.6
Cleveland	6,805,000	10,660,200	10.3	11.7
Richmond	120,300	529,600	.2	.6
Atlanta	329,700	420,300	.5	.5
Chicago	7,684,600	9,733,300	11.7	10.7
St. Louis	2,264,800	3,619,200	3.4	4.0
Minneapolis	2,396,200	3,734,800	3.6	4.1
Kansas City	1,250,200	1,996,800	1.9	2.2
Dallas	75,700	152,300	.1	.2
San Francisco	2,807,700	5,962,600	4.3	6.6
Total	$65,859,300	$90,686,000	100.0	100.0

During the first three months of 1917 only $14,614,200 of municipal warrants were purchased, of which more than a half were purchased during January. The officials of the System had become convinced that America's participation in the war was all but inevitable, and had advised the Regional Banks to reduce their investments.[144] The reserve percentage of the System, the Board held, should be increased to the largest possible

141 The New York Reserve Bank purchased warrants in large amounts for the other Reserve Banks. See *Third Annual Report of the Federal Reserve Board*, p. 229.

142 Earnings from municipal warrants in 1915 amounted to $490.689 and in 1916 to $708.867. See *Second Annual Report of the Federal Reserve Board*, p. 89; and *Third Annual Report of the Federal Reserve Board*, p. 117.

143 *Third Annual Report of the Federal Reserve Board*, p. 102.

144 *Federal Reserve Bulletin*, 1917, p. 154.

figure preparatory to bearing the strain of financing the war.

Investments in Government Bonds. Besides buying municipal warrants in the open market, government bonds were purchased to the amount of $15,918,470 from the opening of the Reserve Banks to December 31, 1915. Of this amount the Federal Reserve Banks of New York, Philadelphia, Cleveland, Chicago and Kansas City purchased 67.5%. Of the total amount purchased, 75.1% bore 2% interest; 20.1% bore 3%; and 4.8% bore 4%.[145] During 1916, $56,750,180 of government obligations were bought, of which these same five Reserve Banks took 62.9% Of the bonds bought in 1916, 84.8% were 2% bonds; 6.9% were 3%; and 7.8% were 4% bonds; and ½ of 1% were one year Treasury notes.[146] During January, February and March of 1917, the Reserve Banks purchased $13,554,850 of United States bonds and one year Treasury notes.[147]

Reserve Banks Must Use Discretion in Buying Government Bonds. Under the provisions of Section 14 of the Federal Reserve Act, the Reserve Banks are empowered to purchase bonds and notes of the United States government, and this privilege has not been limited by the Federal Reserve Board.[148] In investing their funds in this manner, however, the Regional Banks must of necessity exercise discretion. In case a Reserve Bank desired to, and was able to mop up surplus funds in the market in order to make the Bank rate effective, the possession of a certain amount of government obligations would be of the greatest utility. It would, however, be a grave error if the System were to invest a considerable proportion of its resources in such a manner. To do so would tend to freeze the assets of the Banks, and would divert their funds from commercial employments. Not to mention the effects of such a policy on prices.

The government obligations purchased by the Reserve Banks during 1915 were for the purpose of increasing their earnings. During 1916, however, $30,000,000 of the bonds were purchased in pursuance of Section 18 of the Act, which had become effec-

[145] *Second Annual Report of the Federal Reserve Board*, p. 74.

[146] *Third Annual Report of the Federal Reserve Board*, p. 96.

Of the $56,750,180 of government obligations purchased by the Reserve Banks at one time or another during 1916, $17,254,000 were sold, so that the government securities on hand on January 1, 1917, amounted to $55,414,650. (*Ibid.*, p. 98.)

[147] *Fourth Annual Report of the Federal Reserve Board*, p. 122.

[148] *Federal Reserve Bulletin*, 1917, p. 81.

tive on December 23, 1915, and which had for its purpose the retirement of the national bank note.[149] Up to December 31, 1915, the Reserve Banks had earned $171,831 in interest on the government bonds purchased, and $20,503 in appreciation.[150] In 1916, the interest earned amounted to $1,106,860, and the profits realized on securities sold, to $302,184.[151] The System derived a considerably larger revenue in 1916 in the form of interest and profits on government bonds than from earnings on bills discounted.

Bankers' Acceptances. The provisions of the Federal Reserve Act governing the acceptance of time bills of exchange by member banks have been indicated elsewhere. These provisions were incorporated in the Act because it was realized that they, or at least that part of them which had to do with the acceptance of foreign bills, were the *sine qua non* for the establishment of a discount market.

The officials of the System early realized that there would be many obstacles in the way of encouraging the use of dollar drafts. Banks both in New York and in the interior had been accustomed to invest their surplus funds in the form of call loans. The acceptance market would have to compete with the call loan market for the surplus funds of the country. Acceptances would have to be made in every way as attractive investments as the call loan, equally as liquid and with as high a yield.[152] Not only would the acceptance market have to compete with the call loan market, but it would also have to meet competition from the commercial paper market. In addition,

[149] Of the $30,000,000 of bonds purchased by the System in 1916 in pursuance of Section 18, $15,761,000 worth were exchanged for the 3% conversion bonds of 1946, and $14,239,000 worth for the 3% one-year gold Treasury notes. During 1916 the Reserve Banks issued in all $60,046,000 of Federal Reserve Bank notes. See *Third Annual Report of the Federal Reserve Board*, pp. 65, 99, 100 and 101.

[150] *Second Annual Report of the Federal Reserve Board*, p. 89.

[151] *Third Annual Report of the Federal Reserve Board*, p. 117.

[152] With regard to the competition between the acceptance and the call loan market, Paul Warburg stated: "As long as this system continues, as long as the banks all over the country dump their idle funds upon the Stock Exchange, treating these Stock Exchange loans and New York balances invested therein as their quickest and most important secondary reserve, just so long is the Stock Exchange in an unsound condition and just so long will it be impossible to secure for our country the benefits of a wide discount market and effective bank rates." Warburg, *Acceptances versus Call Loans*, p. 565.

banks would have to be induced to give up their former practice of investing in bonds for the yield and rise in price.[153] If the acceptance market, then, were to rest on a solid base, and were to be supported by commercial banks, funds would necessarily have to be diverted from the call loan market, the commercial paper market and the bond market. To anticipate that commercial banks would suddenly change the character of their investments would have been too sanguine an expectation. The development of an acceptance market would take time.

Not only was it necessary to create a demand for acceptances by inducing commercial banks to divert their funds into those channels, but it was equally necessary to make the dollar draft acceptable to persons at home and abroad engaged in international trade. The dollar bill, of course, did not have the standing of the pound sterling. Time would be required to accustom foreigners to the use of American credits. They would be disinclined to break old banking connections. The dollar draft must be made so desirable that bill buyers in foreign countries would quote as low a rate on it as they had been in the habit of quoting on sterling bills. The mail service to the United States was not nearly as fast or as regular from many parts of the world as they were to England. This must be improved to insure the rapid delivery of dollar drafts. If the dollar draft were to acquire a permanent position, American banks would of necessity be forced to establish foreign branches through which American capital could be exported, and which would be in a position to secure credit information for exporters and in other ways look after their interests.[154] The English banks and English-controlled banks, with their thousands of branches in all parts of the world, had been an important factor in contributing to the primacy of the sterling bill.

Attitude of the Federal Reserve System towards Dollar Drafts. To counteract these many obstacles in the way of developing the use of the dollar draft, the Federal Reserve System determined to give it whole-hearted support. The Board defined acceptances eligible for purchase and discount in a very liberal manner—too liberal, in fact. The policy was adopted of purchasing acceptances freely at preferential rates.[155] Further the

[153] See Hollander, *The Currency Act and Bank Investments*, pp. 450–451.

[154] See Willis, *The Federal Reserve*, p. 295.

[155] The Reserve Banks purchased acceptances at rates ranging from 2 to 4 per cent. until March 30, 1917. For statements showing encourage-

Reserve Banks agreed to buy and hold them for the account of member banks so that if they desired later to increase their reserves, the acceptances so purchased might be automatically discounted.[156] Much of the growth in the pre-war use of acceptances was the result of this support. The European war also aided in the development of the use of the dollar draft by removing the competition which American banks would otherwise have met in South America and elsewhere.[157]

Purchases of Acceptances in 1915 and 1916. The Federal Reserve Bank of Philadelphia was the first, on February 19, 1915, to purchase bankers' acceptances in the open market, in accordance with the regulations of the Board issued on the 8th of February. During 1915, the Regional Banks purchased $64,814,000 of bankers' acceptances in the open market, and in 1916, $369,762,300, a total of $434,576,300 for those two years, or a sum equal to 41.4% of the total investment operations of the System. During 1915, the Boston, New York, Philadelphia and Chicago Reserve Banks purchased 82.1% of all the acceptances, and in 1916, 66.4% of the whole.[158] In 1915, the Dallas Bank was the only one to purchase no acceptances, and the purchases of the Richmond and Atlanta Banks together amounted to but ½ of 1% of the whole. In 1916, the southern Reserve Banks purchased but 6% of the whole, wisely keeping their purchases of acceptances down because their rediscounts of commercial paper were heavy. The purchases of acceptances by the San Francisco Reserve Bank in both years amounted to less than that purchased by either Boston, New York, or Philadelphia, probably because Oriental trade is financed largely through the authority to purchase.

ment given to the acceptance market, see *Third Annual Report of the Federal Reserve Board*, pp. 198, 201, 224, 263, 282, and 343.

[156] Such an agreement on the part of the Reserve Banks contained elements of danger, in case the credit situation changed suddenly, making it necessary for the Reserve Banks to exercise greater control over credit extensions.

[157] The use of the acceptance was also encouraged in other ways, as for example:

1) The clearing house in New York allowed such items to be cleared, beginning August 1, 1918.
2) Permission was granted savings banks in a number of states to purchase acceptances.

[158] The acceptances taken by the Reserve Banks of the interior were largely purchased through the Federal Reserve Bank of New York. See *Third Annual Report of the Federal Reserve Board*, pp. 332, 343, and 393.

PURCHASES OF BANKERS' ACCEPTANCES BY THE RESERVE BANKS [159]

Federal Reserve Bank of	1915 Amount	1915 Per cent. of whole	1916 Amount	1916 Per cent. of whole
Boston	$14,105,000	21.7	$ 52,377,000	13.6
New York	25,834,000	39.8	123,406,000	32.0
Philadelphia	7,565,000	11.7	53,122,000	13.8
Cleveland	2,963,000	4.6	27,542,000	7.1
Richmond	250,000	.4	11,313,000	2.9
Atlanta	72,000	.1	12,544,000	3.2
Chicago	5,782,000	8.9	27,061,000	7.0
St. Louis	1,801,000	2.8	20,681,000	5.4
Minneapolis	1,455,000	2.2	13,539,000	3.5
Kansas City	1,788,000	2.8	8,191,000	2.1
Dallas	.....	...	3,543,000	.9
San Francisco	3,230,000	5.0	32,776,000	8.5
Total	$64,845,000	100.0	$386,095,000	100.0

In the first three months of 1917, the Reserve Banks purchased $119,410,497 of acceptances. It is interesting to note that with the approach of the war, they did not decrease the amount of acceptances purchased as they did in the case of municipal warrants.[160]

Maturities of Acceptances Purchased. The maturities of the acceptances purchased during 1915 and 1916 are given in the following table: [161]

	Within 30 days	*After 30 days but within 60*	*After 60 days but within 3 months*
1915	$2,980,000	$9,057,000	$52,808,000
1916	38,442,000	63,651,000	284,002,000

Purchases of Member and Non-Member Acceptances Compared. The average size of the acceptances purchased in both

[159] *Second Annual Report of the Federal Reserve Board*, p. 72. *Third Annual Report of the Federal Reserve Board*, pp. 94 and 103. Of this amount in 1915, $31,000 were trade acceptances, and $16,332,700 in 1916. The Board has no data showing what proportion of the bankers' acceptances purchased in 1915 and 1916 arose from domestic and from foreign transactions. (Letter to author from Edmund Platt, dated January 27, 1923.)

[160] *Fourth Annual Report of the Federal Reserve Board*, p. 119.

[161] *Ibid.*, p. 95. *Second Annual Report of the Federal Reserve Board*, p. 73.

1915 and 1916 was approximately $18,000. In 1915, the majority of acceptances held by the Reserve Banks had been purchased from member banks. In 1916 the amount purchased from non-members increased at a faster rate than that purchased from members so that by the end of the year the Reserve Banks held nearly as many acceptances purchased from non-member banks as from member banks.

MEMBER AND NON-MEMBER BANK ACCEPTANCES HELD BY THE RESERVE BANKS ON SPECIFIED DATES [162]

Date	*Bankers' Acceptances*			
	Member Banks	*Non-Member Banks*		
		Trust Companies	*State Banks*	*Private Banks*
1915—				
May 3	$5,038,000	$8,189,000	$ 10,000	$ 110,000
Nov. 1	8,477,000	4,331,000	253,000	204,000
1916—				
April 3	21,000,000	13,573,000	473,000	3,262,000
Oct. 2	37,798,000	21,782,000	712,000	9,944,000
1917—				
Jan. 1	66,803,000	34,625,000	1,502,000	18,224,000

Growth of the Dollar Draft. Statistics of the growth of the dollar draft are given in the following table: [163]

GROWTH OF THE DOLLAR DRAFT

Date	I Held by the Federal Reserve Bank of New York	II Held by all the Reserve Banks	III Member bank acceptances outstanding	IV Total acceptance liability of American banks (Estimated)	V Per Cent of Column II to Column IV
	$8,715,000 (Dec.30,'15)	$23,013,000 (Dec.30'15)	$32,876,000	$100,000,000	23%
Dec. 31, '16	41,457,000	127,497,000	107,909,000 (Dec. 27,'16)	250,000,000	51
Dec. 31, '17	148,125,000	275,366,000	217,190,000	450,000,000	61.2

[162] *Federal Reserve Bulletin*, 1917, p. 141.

[163] Sources: *Federal Reserve Bulletin*, 1916, p. 92.
Monthly Review of Business and Credit Conditions in the Second Federal Reserve District, April 1, 1921, p. 12.
Second Annual Report of the Federal Reserve Board, pp. 2–3.
The Annals of the American Academy of Political and Social Science, January 1922, p. 215.

The acceptance market during this period as shown in the above table was very largely dependent upon support given it by the Reserve Banks. In fact, the growth of the acceptance market was largely forced, aided as it was by the Reserve Banks, by the removal of competition on the part of the European Banks, and by the fact that America was the only important nation on a gold basis. All in all the Federal Reserve Board and the Regional Banks were quite pleased with the start which had been made towards the development of a discount market in America.[164]

Abuse in Acceptance Practice. The rapid development of the acceptance in a nation where bankers previously had been little acquainted with acceptance theory and practice, the liberality of the Board in defining acceptances and of the legislators in enlarging the provisions of the Act inevitably led to abuses in their use.[165] As single-name paper had superseded in America the old two-name type of accommodation, the framers of the Act believed that the acceptance should be limited to transactions involving the importation and exportation of goods and should in each case grow out of a specific transaction. It was not intended that the acceptance should be used as a means of borrowing for speculative purposes or of assisting individuals to secure a larger amount of accommodation than a bank could lawfully grant on other types of paper. Nor was the acceptance to be used as a means of financing fixed-capital transactions. In every case the acceptance must be retired by the completion of the transaction which gave rise to it. The provisions of the Act had been framed necessarily in a broad way and the task of interpretation was delegated to the Federal Reserve Board. Through its rulings and regulations the Board interpreted the provisions of the Act so broadly as to permit acceptances to become finance bills. For instance, acceptances issued against a shipment of goods, the Board ruled, might be renewed after such goods had been consumed, notwithstanding that the security originally behind the acceptances no longer existed. In the same connection acceptances were permitted to be drawn on the "revolving plan," that is, it became legal for banks to establish a "line" of acceptances just as it might establish a line of credit. Such rulings tended to make the acceptance an accommodation

[164] See, for instance, *Second Annual Report of the Federal Reserve Board*, pp. 3–4; *Federal Reserve Bulletin*, 1916, p. 591; and *Third Annual Report of the Federal Reserve Board*, p. 227

[165] The material at this point is based largely on Willis, *The Federal Reserve System*, Chap. XLIV.

bill drawn without any particular reference to the movement of goods or the character of the shipment and still less to the real maturity of the obligation. The amendments to the Act altering the original acceptance provisions were without economic justification. They permitted acceptances to be used in domestic trade where they were not needed and where their presence would be almost certain to lead to unsound practices. The abuses which crept into acceptance practice in America may be enumerated briefly as follows:

1) Despite the opposition of the Board [166] the practice developed among banks of discounting their own acceptances. Such practices militated against the formation of a healthy discount market and were of course wholly contrary to acceptance practice in Europe.

2) As acceptances were in many cases drawn for periods longer than the underlying transactions and then sometimes renewed, they did not always represent specific transactions and lost their most valuable characteristic of self-liquidation. It has been estimated that the renewal acceptances placed on the market up to January 1, 1917, amounted in all to $125,000,000. As Dr. Willis has indicated: "These renewal acceptances cannot be regarded as a normal or perhaps wholesome element in the financial market." [167] The practice of renewing acceptances reached a high point at the time of the formation of such syndicate agreements as the French acceptance agreement entered into by Brown Brothers, the French acceptance agreement entered into by the Guaranty Trust Company, the American Tobacco company acceptance agreement, the St. Louis Gas and Oil acceptance agreement, the Goodrich Rubber Company acceptance agreement, and the Chicago Wool Corporation acceptance agreement. The French Industrial Credit of November 11, 1916, was an arrangement whereby the Guaranty Trust Company of New York, the Bankers Trust Company and others were to extend in all $50,000,000 in the form of acceptance credits to certain French merchants. The acceptances were to run for three months' sight from January 16, 1917, and were to be renewed five times. This agreement amounted to nothing more than a syndicate loan running from January 16, 1917 to July 16, 1918. Including all charges the Syndicate extended such credits to the

[166] See, *Third Annual Report of the Federal Reserve Board*, p. 5; and Pierre Jay, *The Development of a Discount Market and Its Relation to Our Foreign Trade*, p. 7; *and Federal Reserve Bulletin*, 1917, p. 28.

[167] Willis, *What the Federal Reserve System Has Done*, p. 278.

French merchants at the rate of 6½% per annum, while at this particular time the acceptance rate at the Federal Reserve Bank of New York was 2½%, "leaving the American acceptors a profit of 4% on the entire transaction of $50,000,000 for the service of going through the form of accepting and rediscounting." [168]

3) Acceptances were used by banks as a method of extending credit to persons to whom the banks in question had extended all of the credit in ordinary ways that the law allowed.

4) Acceptances were employed to enable speculators to hold goods in warehouses for price advances.

5) Acceptances were pyramided. Several might be drawn against the same shipment of goods or the acceptances might be collateraled by bankers' bills which had been drawn previously.[169]

All such practices could not do otherwise than impair the standing of the American discount market.[170] Bankers' acceptances attained a certain growth largely by the absence of foreign competition and by reason of the support lent by the Reserve Banks,[171] a large part of which was unwarranted. It was realized by students of the subject that it would be no easy matter for American banks to retain their acceptance business after the cessation of hostilities.[172]

[168] Willis, *The Federal Reserve System*. Through such an acceptance syndicate a foreign government might be able to borrow funds in New York at a lower rate of interest than it would have to pay on bonds or short-term notes. The military operations of the foreign governments would thus be financed by commercial banking credit whereas investment credit should have been employed.

[169] *Federal Reserve Bulletin*, 1917, p. 29.

[170] The abuses grew so pronounced that Gov. Harding was lead to issue the following statement: ". . . we must not permit either our ambition or our desire to assist others, or considerations of profits, to cause us to disregard long-established and sound banking principles." *Federal Reserve Bulletin*, 1916, p. 587. See, also, an editorial in *The Bankers Magazine*, (New York), April 1916, pp. 474–477.

[171] The liberality of the Reserve Banks in purchasing acceptances induced the member banks to rediscount their holdings whenever the call-loan rate rose so that they might profit by the rise. The Reserve Banks then had to hold the bag while their funds extended on acceptances were being used in the call-loan market.

[172] "At the return of peace, it will be no easy matter to retain the acceptance business already acquired, to say nothing about its further expansion. It is an advantage both to exporters and importers to have bills drawn upon a single central world market, rather than on cities in each of the countries with which they are trading." Sprague, *Federal Reserve Banking System in Operation*, pp. 651–652. See, also, Willis, *What the Federal Reserve System Has Done*, p. 282; and *Federal Reserve*

Uniform Policies Important in the Purchase of Bankers' Bills. The majority of the Bankers' acceptances purchased by the System were bought in New York either by the New York Reserve Bank for its own account or in behalf of the other Regional Banks. This raises the question whether discount markets might be developed elsewhere than in New York. Without question the most important discount market, for the buying and selling of "salt water bills," will be located in New York. Smaller markets may develop in Boston and Philadelphia and Chicago and San Francisco. Though the development of a discount market in San Francisco will probably be hampered by the extensive use of the authority to purchase in Oriental trade. Whether one or twelve discount markets develop it is highly important that the Reserve Banks adopt uniform policies in buying and selling acceptances, just as important as it is in the establishing of discount rates. Uniform policies must be adopted in the buying and selling of bills for only in this way can gold movements be controlled, importations of capital encouraged and the open market be regulated.[173]

Open-market Operations More Important than Rediscount Operations before April, 1917. Prior to April 1917, the open market operations of the Federal Reserve System were of considerably more importance than the rediscount operations. In 1915 the value of the warrants, bonds and acceptances purchased in the open market amounted to 48% of the total investment operations and in 1916 to 72%. The influx of gold and the release of reserve funds rendered it unnecessary for the great majority of member banks to rediscount in these years. At the most, not more than 11% of the member banks rediscounted during any one month. Rediscount operations excepting in the southern districts were slight.

Bulletin, 1916, p. 591. Economists recognized that the dollar draft would have a hard struggle at the end of the War. The efforts of German bankers before the War to create a discount market in Berlin did not meet with great success.

[173] Such uniformity of action might be brought about either through the action of the Board or through Agents' and Governors' conferences.

Some economists at the time the Federal Reserve Act was being discussed doubted the ability of a regional type of organization to develop a discount market. In regard to this point, Dr. Willis has stated: ". . . there seems to be no reason to doubt that the regional or district plan has operated as effectively in the direction of a discount market as a central bank would have done." Willis, *What the Federal Reserve System Has Done*, p. 273.

INVESTMENT OPERATIONS OF THE FEDERAL RESERVE SYSTEM DURING 1915 AND 1916 [174]

	1915	1916
Commercial paper discounted	$161,353,000	$207,870,500
Bankers' acceptances purchased	64,814,000	369,762,300
Trade acceptances purchased	31,000	16,332,700
United States securities purchased	15,713,470	56,750,180
Municipal warrants purchased	65,859,300	90,686,000
Total	307,770,800	741,401,680

Reasons Prompting the Reserve Banks to Go into the Open Market. The reasons prompting the Reserve Banks to go into the open market were several. Warrants were purchased heavily by certain of the Reserve Banks that they might meet their expenses. The motive for purchasing Government bonds and notes was partly to increase earnings and partly to carry out the provisions of the Act leading to the retirement of the national bank notes. Acceptances were purchased to encourage the use of the dollar draft and to support the discount market. In 1916 the earnings from municipal warrants were estimated to be at the rate of 2.64% per annum, from United States securities, 2.35%, and from acceptances, 2.36%, while earnings from bills discounted amounted to 4.20 per cent.[175]

EVALUTION OF PRE-WAR DISCOUNT POLICIES OF FEDERAL RESERVE BANKS

The time has come for an evaluation of the pre-war discount policy of the Reserve Banks. The System spent its adolescence in a rapidly changing economy. Even before the Banks were officially opened the members of the Board were compelled to grapple with several problems of considerable importance such as the demoralization of the foreign exchanges and of the cotton market. It was not long after the Banks had opened before the influx of gold, the return of American securities and the unprecedented exports began. No time was allowed the Reserve Banks for a slow progressive growth. Its development was forced. Its policies had to be adopted quickly without the mass of experience and tradition which lies behind decisions made by the

[174] *Third Annual Report of the Federal Reserve Board*, p. 103.
[175] *Ibid.*, p. 105.

officials of the Bank of England. In evaluating the discount policies of the Reserve Banks these facts must be kept in mind.

Services Rendered by the Reserve Banks. Nor must the immensity of the task of organizing the twelve banks and of setting them in operation be forgotten in passing judgment upon the achievements of the System. Nor must the influence of the Reserve Banks in easing the seasonal tension, in modifying through the elastic qualities of its currency seasonal fluctuations in interest rates, be lost sight of.[176] That in itself was a service of no small importance. The System made some headway in the standardization of commercial paper and in the development of a discount market.[177] Psychologically its presence in the pre-war years was of the greatest importance in serving to assuage business hysteria.

We must pass, however, from a consideration of the brighter aspects of the pre-war experience of the Federal Reserve Banks to an evaluation of the discount policies adopted by the System. These are open to serious criticism on several grounds:

1) There was a lack of uniformity in the discount policies adopted by the several Reserve Banks.
2) The policies adopted were shaped to favor the agriculturalists.
3) Emphasis was laid on the form of paper rediscounted and purchased to the exclusion of a careful analysis of the underlying transaction.

Lack of Uniformity in Discount Policies. As has been mentioned before, the beauty of the regional plan of organization was that it allowed the Bank rate to vary in different parts of the country in accordance with the economic development of those sections. However, when we compare the rates established in one district with the rates established in another, we find that they bore little relationship to the economic development of the respective sections. Taking the yield on bills discounted as an index of the rates actually charged,[178] we find that in 1916 this varied as between the separate Banks from 3.52% in the Boston district to 5.01% in San Francisco.

[176] See Willis, *What the Federal Reserve System Has Done*, p. 272.

[177] See *Ibid.*, p. 287 and *Second Annual Report of the Federal Reserve Board*, pp. 10 and 360.

[178] Helfferich feels that this is the best index of the rates actually charged, see Chapter II.

CALCULATED ANNUAL RATE OF EARNINGS FROM BILLS DISCOUNTED [179]

Federal Reserve Bank of	*Yield in 1916*
Boston	3.52%
New York	3.69
Philadelphia	3.75
Cleveland	4.25
Richmond	4.00
Atlanta	3.77
Chicago	4.60
St. Louis	4.04
Minneapolis	4.80
Kansas City	4.77
Dallas	4.49
San Francisco	5.01
Average	4.20

As the table shows, the yield on bills discounted by the Atlanta Bank was lower than that at all the others excepting the Boston, Philadelphia and New York Reserve Banks. The yield on bills discounted at Richmond was lower than that at seven of the other banks. The yield at Dallas was lower than that at the Chicago, Kansas City, Minneapolis and San Francisco Banks. Is there any justification for the establishment of such low Bank rates at the Southern Reserve Banks in view of their large rediscount operations and of the high market rates prevailing in those sections? [180] The very fact that the yield on bills discounted at the Atlanta Bank in 1916 averaged 3.77% and at the San Francisco Bank 5.01% is proof of itself that there was no uniformity in the discount policies of the Reserve Banks.

While the Board seemed to hold to the opinion that the Bank rates should rule above the market, if we may judge their opinions from pronouncements in the Board Reports, only in the

[179] *Third Annual Report of the Federal Reserve Board*, p. 105. Comparable figures for 1915 have not yet been compiled by the Board.

[180] The Board seemed to feel that the Reserve Banks could lower interest rates by increasing their investment operations and by so putting more money in circulation. See *Second Annual Report of the Federal Reserve Board*, pp. 6 and 159. That the rate of interest does not depend upon the amount of money in circulation was demonstrated by David Hume more than a hundred and seventy years ago.

financial centers of the country could the Bank rates be said to have ruled above rates prevailing in the market. Elsewhere the Bank rates ruled below the market whether we take line of credit rates as an index of the market or the average rate charged by the member bank on paper rediscounted with the Reserve Bank. In districts where the market rates were highest, as in the Atlanta and Dallas districts, the Bank rates were low. Uniform policies should have been adopted by the Federal Reserve Board and the Reserve Banks, first, as regards the relationship between the Bank rate and the rates prevalent in the market: and second, as regards the relationship between the Bank rates as established in one district and those established in another.

Discount Policies Shaped in Interests of Agriculturalists. One of the most disheartening conclusions to be drawn from the pre-war discount policy of the Reserve Banks is that the policies adopted were often shaped in the interests of certain classes. From the beginning the agriculturalists were favored. A striking example of this lies of course in the establishment of the commodity rates. Even the rates set on ordinary agricultural paper bore no relationship to the rates charged in the market. The Act was itself amended to permit the Reserve Banks to discount a greater amount of such paper. The farmer was not discriminated against. The System favored him to the exclusion of other classes, but without greatly aiding him, for with gold pouring in from Europe and with the release of the reserve funds commercial banks were as a rule possessed of a sufficiency of resources to finance his transactions.

Paper Discounted and Purchased without Proper Scrutiny of the Underlying Transaction. In laying emphasis on the form of paper rediscounted and purchased without a careful analysis of the underlying transaction, the System is to be severely criticised. In their desire to promote the development of a discount market the Reserve Banks bought bankers' bills too freely, at unduly low rates, at rates which in many instances were not warranted by the character of the paper. Nor did the Reserve Banks sufficiently scrutinize the underlying transactions or the credit standing of the parties to the bill. Through its rulings and regulations the Board permitted bankers' acceptance to degenerate into an accommodation bill. The growth of the discount market was largely forced. Had it not been for the support given it by the Reserve Banks it certainly could not have attained the proportions it did.

The trade acceptance movement reached "an early climax and then sank into discredit." [181] Without cordial support from the business public, which the trade acceptance lacked, there was no hope that it would ever become a prime piece of commercial paper. In fact it early sank into the ignominious state of being used as a collection instrument. Despite this the Reserve Banks established preferential rates on this type of paper, and rediscounted trade acceptances freely without sufficient credit analysis.

The Member Bank Complex. In fact the Reserve Banks only to a very slight extent subjected the paper offered for rediscount to any scrutiny or credit analysis. So fearful were they of displeasing the member banks, that they discounted practically all paper thrust upon them.[182] Little was rejected. To the extent that the Board unjustifiably relaxed its regulations governing commercial paper and to the extent that it surrendered its leadership in the improvement of commercial paper standards it is itself responsible for this tendency. The member bank complex has continuously shaped the policies of the Reserve Institutions. To such an extent was this true that some of the Reserve Banks lost sight of their social significance, were unwilling to deal with the public excepting through a member bank, and were fearful all the while that the members might regard them as competitors.[183]

Dangerous Precedents Established. In judging the pre-war discount policy of the Reserve System the chief criticism lies doubtless in its establishment of dangerous precedents. In some districts bankers were accustomed to discount at a profit. Agriculturalists were made to feel that they were a privileged group. Those dealing in acceptances came to look upon the System as a benevolent purchaser of all their surplus stock. While it is true that the policies adopted resulted in no tangible harm (conditions were not such that they could do much damage as member banks were not obliged to rediscount heavily), dangerous precedents were established. The adoption of similar policies at another time might work irreparable damage.

Relationship between the Pre-war Discount Policy of the Reserve System and the Price Level. No summary of the pre-war discount policies of the Reserve Banks would be complete

[181] Willis, *The Federal Reserve System—A Retrospect of Eight Years*, p. 576.

[182] See for instance, a table appearing in the *Second Annual Report of the Federal Reserve Board*, p. 205.

[183] See Willis, *What the Federal Reserve System Has Done*, p. 286.

without a consideration of the relationship between the policies adopted and the rise in prices. Wholesale commodity prices rose from an average of 100 in 1913 to 173 in April 1917.[184] Were the policies inaugurated by the System responsible for this rise? While many of the policies adopted by the System are open to serious criticism, we may safely conclude that they had at that particular time only a negligible effect on prices, if indeed they affected the price level at all. The imports of gold totaling $1,192,120,000 [185] and the release of $464,919,076 of reserve funds,[186] in making it easy for banks to expand their loans, discounts and investments, are chiefly responsible for the rise. From June 30, 1914, to June 20, 1917, these increased by $7,800,000,000. No power on earth could have prevented this increase or its effect on the upward movement of prices.[187] Inasmuch as most member banks were not forced to rediscount with the Reserve Banks, the Bank rates could not have controlled the situation no matter to what heights they might have been raised. The Bank rates were not effective.[188] In April 1917, the total investment operations of the Reserve System amounted to but 168 millions of dollars,[189] a mere bagatelle relative to the

184 See *Monthly Labor Review*, July 1922, p. 61.

Prices did not begin to rise rapidly until July 1915, a fact which Professor Wesley Clair Mitchell explains as follows: "It is the common rule that revival after depression is confined for several months to increasing the physical volume of trade. Not until the more efficient plants have substantial backbone orders on their books do they begin active bidding for materials and marking up the prices of their products. . . . The goods that led the rise of prices were the goods in most active demand and the goods in restricted supply." Mitchell, *Prices and Reconstruction*, p. 136.

185 See p. 186.

186 See pp. 191–193. The release of the reserve funds was of course in consequence of the provisions of the Act. In this section we are not considering the effect of the provisions of the Owen-Glass Bill on prices but rather the policy of the Reserve Banks as it affected the price level.

187 With regard to this statement Mr. R. C. Leffingwell, once Assistant-Secretary of the Treasury has said: "Before we entered the war, expansion in this country was based upon the importation of gold and investment securities. The federal reserve system was as powerless as a babe unborn to prevent it. The federal reserve banks were hard put to it to earn their operating expenses. Member banks did not have to borrow and therefore bank rates could not be effective." *The American Economic Review*, March 1921, p. 31.

188 In December 1916, and in February and March 1917, the Bank Rates were tending to become effective. See *Third Annual Report of the Federal Reserve Board*, p. 202.

189 *Fourth Annual Report of the Federal Reserve Board*, p. 131. *Federal Reserve Bulletin*, 1917, p. 335.

tremendous increase which had occurred in the loans, discount and investments of the 30,000 odd commercial banks. The Reserve Banks cannot be held accountable for the pre-war rise of prices [190] in America any more than the Bank of England was responsible for the rise in prices which took place in the United Kingdom from 1896 to 1914. For restricting their investment operations to a point just sufficient to meet their expenses, the Reserve Banks deserve much praise.[191] To have increased them in order to have realized larger profits would have tended to raise the price level proportionately.

[190] While the establishment of the gold settlement fund by the Reserve Banks did tend to raise prices, in all probability its effect was a negligible one relative to the effect of the inflow of gold and the release of the reserve funds.

[191] In regard to this, Mr. A. C. Miller, a member of the Federal Reserve Board, has stated: "I am afraid that the great influence exerted by the Federal Reserve banks in steadying the movement and level of rates is not generally appreciated at its full value and significance. The wise policy of conservatism and self-restraint which has been pursued by the Reserve banks as a whole has been given to the movement of industrial expansion which has been under way for the past year, taking the country by and large, a quality of health and solidity that it would almost certainly not otherwise have possessed. . . . It has, so far as its situation permitted, created an atmosphere conducive to healthy expansion, and has used such influences as it could command to temper the spirit of reckless adventure and prevent it from becoming a menace to the country's welfare."

CHAPTER VI

WAR FINANCING

Importance of the Fiscal Services of Central Reserve Banks. It is unfortunate but true that during a war which absorbs the entire activities of a nation, the discount and credit policies of central reserve banks become subordinated to their fiscal functions. At such a time central banks are usually required to transfer and disburse vast sums of money, to assist in collecting the revenue and in selling obligations for the government, and, if the condition of the Treasury should require, to make direct credit advances to their respective governments. In fact, the usual reason for establishing central banks has been the need of warring nations for agencies which might render such services. The fiscal functions of central banks therefore attained importance first and antedated the many other services which they now render and which in times of peace are considered to be of greater significance.[1] The Bank of England, for instance, was established in 1694 in consequence of the financial straits to which the Government of William and Mary had been reduced in its struggles with Louis XIV. Alexander Hamilton recommended the establishment of the First United States Bank because it would assist the Government, so he claimed, in obtaining pecuniary aid, in collecting taxes, and in strengthening the public credit.[2] That the Bank did accomplish all this and more, is attested by Gallatin.[3] The establishment of the Second United States Bank was urged by Secretary of the Treasury Dallas as a result of the war of 1812, on the ground that it would be of incalculable service in restoring the then depreciated bank notes to a specie parity, in strengthening the credit of the nation, and in acting as fiscal agent of the Government.[4] Even the National Banking System

[1] See Raphael-Georges Lévy, *Le Role des Banques D'Emission Dans La Guerre Actuelle.*

[2] See *American State Papers, Finance*, Vol. I., pp. 67–76.

[3] Gallatin's report was communicated to the Senate on March 3, 1809. See *American State Papers, Finance*, Vol. II., pp. 351–353.

[4] This report was sent to the House of Representatives on October 18, 1814. See *American State Papers, Finance*, Vol. II., pp. 866–869.

owes its origin, in part, to the belief of Secretary Chase that such a system would be of service in increasing the sale of Government bonds and in furnishing safe depositaries for public funds.

At the time of the passage of the Federal Reserve Act, the Treasury Department faced no such serious financial problems as had confronted it in 1791, in 1816 and in 1863. Emphasis was consequently laid on the services which the Regional Banks might render in effecting monetary and banking reform. The fiscal services of the new banks, while considered,[5] were thought of not so much as an entity in themselves, but rather as a part of the whole scheme of banking and currency reform. While their fiscal functions were not important at first, with the entrance of America into the Great War they became the pivot about which all other activities of the Reserve Banks revolved. Because of this the present Chapter must deal largely with the problems of war finance to which the discount policies of the Reserve Bank were subordinated.

War Financing and the Federal Reserve System. For some time before America entered the war, the Federal Reserve Banks had been acting as depositaries of public moneys, had been receiving funds from Government collectors of customs and internal revenue, and had been paying warrants drawn on the Treasury and cashing United States bond coupons. These duties had been assumed on January 1, 1916, in accordance with a letter addressed to each of the Reserve Banks by Secretary McAdoo on November 23, 1915, informing them of his intention to appoint them depositaries and fiscal agents of the Government under the permissive powers of Section 15 of the Act.[6] A little more than a month after America entered the war, on May 14, 1917, the Secretary of the Treasury designated the Reserve

[5] See *Changes in the Banking and Currency System of the United States.* House of Representatives Report No. 69, 63rd Congress, 1st Session, p. 11.

[6] *Federal Reserve Bulletin,* 1915, p. 395.

The Glass Bill by Section 16 would have required the Secretary of the Treasury to deposit all money held in the general fund of the Treasury, except the five per centum fund for the redemption of national bank notes, with the Reserve Banks within twelve months after the passage of the Act. In the Senate Bill this was amended so that the Secretary of the Treasury might use his discretion in depositing such funds with the Reserve Banks, or with legal depositaries or with the sub-treasuries. The final Act followed the Senate Bill. Had the provisions in the Glass Bill stood, the Sub-Treasuries would probably have been abolished within a year after the passage of the Reserve Act. It was not until May 29, 1920, that an act was finally enacted which provided for the discontinuance of the sub-treasuries on or before July 1, 1921.

Banks fiscal agents for loan subscriptions.[7] Their responsibilities and duties were gradually enlarged to include the sale and redemption of certificates of indebtedness; the sale of Liberty bonds; the payment of coupons thereon; the conversion of the bonds of one issue into those of another; the exchange of bonds of different denominations; the administration of deposits of the United States Government in depositary banks resulting from the sale of certificates of indebtedness and bonds; the examination, approval and custody of securities pledged as collateral against Government deposits held by the depositary banks; and the sale of war-savings stamps and thrift stamps.

The Federal Reserve Banks Prepare for War. Though it was not until in May of 1917 that the Reserve Banks were authorized to receive loan subscriptions, the entrance of America into the war had not caught them unawares. For several months they had quietly been strengthening their fiancial position. Their earning assets had been reduced from $221,896,000 at the beginning of 1917 to $167,994,000 in April.[8] The percentage of gold reserves had increased in the same period from 82.1% to 89%.[9] At the declaration of war their assets were in a highly liquid condition.[10] There was little in the way of preparation still to be accomplished. Indeed, so carefully had the officials of the System prepared for the coming struggle, that during the first quarter of 1917 they had placed orders with the Bureau of Engraving and Printing for $900,000,000 of Federal Reserve notes to be distributed to the mints and sub-treasuries throughout the country.[11] Their actions throughout the first quarter of 1917 afford a good illustration of the extent to which they cooperated with the war policies of the Government; in fact, throughout the entire war they gave unstinting aid, even when well-recognized principles of economics and finance had to be suspended to do so.[12]

[7] *Federal Reserve Bulletin*, 1917, p. 423. For a discussion of the fiscal functions of the Reserve Banks, see Chapman, *Fiscal Functions of the Federal Reserve Banks*.

[8] *Federal Reserve Bulletin*, 1917, p. 335.

[9] *Ibid.*, 1918, p. 130.

[10] As the excess reserve of national banks amounted to over a billion dollars, they also were in an excellent position to aid government financing. *Annual Report of the Comptroller of the Currency*, 1917. Vol. I, p. 46.

[11] *Federal Reserve Bulletin*, 1917, p. 335 and *Fourth Annual Report of the Federal Reserve Board*, p. 2.

[12] See *Seventh Annual Report of the Federal Reserve Board*, p. 11, and *Finance Report*, 1917, p. 22.

The Impounding of Gold. From the outbreak of the war each one of the belligerent nations endeavored by every possible means to increase and conserve its monetary stock of gold. The larger the gold reserves of central banks, so finance ministers argued, the greater would be the expansibility of the banking system and the ability of the nation to finance foreign purchases. In 1914 the gold reserves of the Reichsbank amounted to 1253 million marks. To increase and conserve this amount the German government deposited in the Reichsbank the gold in the war chest accumulated since the Franco-Prussian war, prohibited gold exports, and launched a campaign to induce citizens to relinquish their gold.[13] As a result of these measures, the gold stock gradually increased until on May 31, 1917, it reached a maximum figure of 2,567,100,000 marks.[14] During the fall of 1914 and through 1915, the Bank of France increased its gold reserve from 4,766,700,000 francs to 5,367,400,000 francs through deposits of gold on the part of the public and through purchases of gold abroad.[15] Exports were allowed only with the permission of the Government. During the war France found it necessary to export 3,000,000,000 francs of gold, most of which went to England and America.[16] In England the public and joint-stock banks were induced to turn over their gold holdings to the Bank of England, receiving its notes in return. The gold coin and bullion in the issue department increased from £26,041,070 on August 7, 1914, to £73,878,075 on November 13, 1918.[17]

The United States, influenced, as were the European nations, by Mercantilist ideas regarding the value of gold, followed similar policies in impounding gold and in increasing and conserving the amount in the Reserve Banks, all of which had considerable influence on the discount policies of the Regional Banks. The measures adopted in the United States were:

1) The Reserve Act was amended in order to lower the reserves held

[13] *Federal Reserve Bulletin*, 1919, p. 430.

[14] *Ibid.*, p. 433.

[15] *Annuaire Statistique*, Statistique Générale de la France, 1914 et 1915, pp. 240–241.

[16] *Federal Reserve Bulletin*, 1919, p. 338.

[17] *The Economist* (London) August 8, 1914, p. 289 and November 16, 1918, p. 692. It has been estimated that gold coins to the extent of 600 millions of dollars were in circulation in England in 1914. (*Commerce Monthly*, October 1921, p. 7)

by the member banks and to provide that they be carried exclusively with the Reserve Banks.

2) State banks were encouraged to join, or to keep their reserves with, the Reserve Banks.

3) Gold held by the public and by banks was taken by the Reserve Banks in exchange for Federal Reserve notes.

4) Exports of gold and silver and dealings in foreign exchange were brought under strict control. The domestic use of gold was discouraged.

A consideration of these measures is of importance to a proper understanding of the war discount and credit policies of the Reserve Banks, since they were instituted either with the idea of loosening up credit, of keeping interest rates low or of promoting inflation.

Lowering and Changing the Character of the Reserve Requirements.[18] By amendments passed on June 21, 1917, the reserves required to be held by member banks were lowered to the following percentages which were to be maintained as deposit accounts with the Reserve Banks.

	Central Reserve Cities	*Reserve Cities*	*Country Towns*
Net Demand Deposits (Payable within 30 days)	13	10	7
Time Deposits	3	3	3

Prior to this amendment, it will be remembered, member banks had kept a portion of their required reserves with the Reserve Banks, a portion in their own vaults, and a portion with their correspondents. Henceforth, however, only the realized deposit

[18] The reserve requirements were lowered in addition to the manner described in this section in still another way in that the Board was empowered to lower the reserve requirements of member banks in sections incorporated into large cities. See *Congressional Record*, April 24, 1918, p. 5579.

accounts of the member banks with the Reserve Banks were to count as lawful reserve. This amendment had been foreshadowed to some extent by the amendment of September 7, 1916, which authorized the Federal Reserve Board, upon the affirmative vote of not less than five members, to permit member banks to carry with the Reserve Banks any portion of their reserves then required to be held in their own vaults.[19] As the member banks failed to respond,[20] they were compelled to transfer their reserves to the Reserve Banks by the amendment of June 21, 1917. The member banks in central reserve cities and Federal Reserve cities were forced to comply with this amendment immediately, elsewhere they were given until July 15, 1917.[21]

Purpose of the Changes in the Reserve Requirements. Carter Glass, Chairman of the House Committee on Banking and Currency, stated[22] that the primary purpose of the proposed change was to increase the gold holdings of the Reserve Banks, in order that the System might better withstand any exigency ensuing from conditions arising out of the European war. The amendment would add, he thought, approximately $300,000,000 in gold to the present holdings of the Reserve Banks, and would leave to the business judgment and discretion of the member banks the determination of the amount of currency they should carry in their own vaults. As anticipated, this amendment did bring about a greater concentration of the gold stock of the country in the vaults of the Reserve Banks. On January 1, 1917, the monetary gold stock of the country amounted to $2,864,842,000

[19] See *Federal Reserve Bulletin*, 1916, p. 508 and *Seventh Annual Report of the Federal Reserve Board*, p. 316.

[20] Professor Westerfield declares that the member banks were reluctant to do this for two reasons; first, they disliked relinquishing their gold; and second, they feared that to increase the resources of the Reserve Banks would make them more formidable competitors in the open market. Westerfield, *Reserve Situation in the Federal Reserve System*, pp. 516–517.

[21] *Federal Reserve Bulletin*, 1917, p. 503.

The Federal Advisory Council, following the Aldrich plan, had suggested in lieu of this amendment and as a method of concentrating gold in the Reserve Banks that member banks be allowed to carry their vault reserve in the form of Federal Reserve notes. (*Fifth Annual Report of the Federal Reserve Board*, p. 788). This would have meant the substitution of paper money which might have behind it a gold reserve as low as 40% for gold coin, bullion, gold certificates and lawful money in the vaults of the member banks. This would not have been as frank a proceeding as was actually followed.

[22] *Amendments to Federal Reserve Act.* House of Representatives Report No. 35, 65th Congress, first Session. This report was submitted on April 27, 1917.

of which 25.7% was held by the Reserve Banks, while on January 1, 1918, the monetary stock of gold amounted to $3,040,439,000 of which 55.1% was held by them.[23]

With the gold concentrated in the vaults of the Regional Banks it was recognized that the banking system would be capable of greater expansibility in connection with the loan operations of the war. Secretary McAdoo, in a letter to Carter Glass, emphasized this point:

> . . . . the President approved yesterday the bill unanimously passed by both Houses of the Congress authorizing an issue of five billion dollars of bonds and two billion dollars of one-year certificates of indebtedness. . . . The financial operations thus authorized are without parallel in the history of the country, and they, as well as the conditions arising out of the war which has been thrust upon us, must be met with vigor, energy, and organization. . . . We have the resources and the spirit to master the great tasks ahead of us, but without proper organization the potentiality of our resources is culpably diminished. . . . One thing of immediate and pressing importance is to further strengthen the Federal Reserve System so that the colossal financial operations of the Government may be facilitated and the commercial interests of the country be undisturbed. The amendments to the Federal Reserve Act, unanimously recommended by the Federal Reserve Board, are of infinite importance at this time. They have been carefully considered with relation to present problems and to those which must arise out of the conduct of the war, and the entire board is impressed with the imperative necessity of strengthening the Federal Reserve System in the manner proposed, in order that there may be no doubt about its ability to meet any test the future may impose upon it.[24]

Debate in Congress on the Amendment. Carter Glass, in his address before the House explaining the purpose of the amendments, likewise dwelt upon the increased expansibility of the banking system which such amendments would bring about.

> I think, upon the basis of reserve balances at this time, the proposed change would give the Federal reserve banks an additional gold supply of about $400,000,000, without appreciably disturbing

[23] *Hearing before the Joint Commission of Agricultural Inquiry*. 67th Congress, 1st Session, Part 13, p. 521.

[24] *Amendments to Federal Reserve Act*. House of Representatives Report No. 35, 65th Congress, 1st Session, p. 4.

> the reserve requirements of the member banks. In brief, that would mean that the Federal reserve banking system would be enabled to rediscount about $1,000,000,000 more of commercial paper than they could rediscount under the law as it exists today.[25]

In answer to a query Mr. Glass stated that the bill had met with no opposition, that not a single protest had come from any bank, that it was approved by the Federal Reserve Board, the Federal Advisory Council, and by the Banking and Currency Committees of both Houses of Congress.[26] On the whole the debate on the amendment in the House centered about petty technicalities and matters of trifling importance. The only one to emphasize the inflationary aspects of the bill was Mr. Hill of Connecticut. In reply to his forebodings, a member of the Banking and Currency Committee replied:

> The Gentleman from Connecticut [Mr. Hill] also said that provided for an inflation. Well, potentially, it does; it provides for a further mobilization of gold upon which credit can be issued, but the Federal reserve banks are exceedingly conservatively managed; their rediscount rates are so high now that they do not attract business; they have wisely made no effort whatever to attract business; they are holding their reserve for an emergency. That is what they were created for. They are loaning only money where it is needed to banks, but they are not seeking to compete with the open-market money rates for call or time loans in our financial centers. A bank in the East which owns bonds, for instance, can take its bonds to the National City Bank of New York, or to one of the other large banks there, and can borrow money from them at a lower rate than it can generally obtain of the Federal reserve bank, and that, I think, is as it should be. It shows that the Federal reserve banks can be trusted with the greater power this measure will afford them for handling any emergency that may arise during the war.[27]

Aside from this discussion the inflationary possibilities of the measure were scarcely discussed and when mentioned were minimized. Mr. McFadden felt that the reduction in the reserves held by member banks in country towns against demand deposits had not been sufficient and offered an amendment to reduce their

[25] *Congressional Record*, Vol. 55, p. 1876.
[26] *Ibid.*, p. 1579.
[27] *Ibid.*, p. 1874. Representative Edmund Platt.

reserve requirements to 6%.[28] Mr. Wingo argued that a concentration of gold in the vaults of the Reserve Banks was essential to give them greater control over its probable outflow at the termination of hostilities.[29] The debate in the Senate ignored all fundamental issues and concerned itself with par-collection.

Expansibility of the Banking System. As an illustration of the quantitative difference in the expansibility[30] of the banking system before the amendments of June 21, 1917, and after their adoption, the following examples are inserted. We will confine our problem to the expansibility of member banks in New York City and of their Reserve Bank. Let us assume that member banks in New York City have demand deposits amounting to two billions of dollars and that the Reserve Bank has deposits amounting to one billion of dollars, has 500 millions of Federal Reserve notes outstanding, and has a gold stock amounting to a billion.

Expansibility Prior to the Amendments of June 21, 1917:

Under the original Federal Reserve Act, it will be remembered, member banks in New York were required to hold a reserve of 18% against demand deposits, $\frac{6}{18}$ of which were to be held in their own vaults, $\frac{7}{18}$ with the Reserve Bank, and the balance, $\frac{5}{18}$, with either.

Let us assume that the member banks maintain $\frac{1}{2}$ of the reserves required against their demand deposits in their own vaults and $\frac{1}{2}$ with the Reserve Banks.

Let us assume further that for every increase of $5 in the demand deposits of member banks, there is an increase amounting to $1 in the amount of Federal Reserve notes outstanding.[31]

Against $5 of demand deposits, a reserve of 18%, or 90 cents, must be maintained. Of this, according to our hypothesis 45 cents is

[28] *Congressional Record*, Vol. 55, p. 1876.

[29] *Ibid.*, p. 1883.

[30] We are considering here the maximum expansibility of the banking system and not the expansibility of a single bank. Generally speaking there are really two theories which attempt to explain the expansibility of credit. One explains credit expansions by increased quantities of gold (See Fisher, *The Purchasing Power of Money*). The second explains the growth of credit by increases in the amount of vendible goods (See Hobson, *Gold, Prices and Wages*). Neither theory holds in time of war. Specie payments are suspended in whole or in part and banks extend credit not on the basis of actual commercial transactions to business men in a satisfactory credit condition but largely on the basis of government bonds.

[31] See p. 135, note #10.

held in the vaults of the member banks, and 45 cents is held with the Reserve Bank.

Against a deposit account of 45 cents, the Reserve Bank must maintain a 35% reserve, or a reserve of 15.75 cents.

For every $5 of new demand deposits, therefore, a gold reserve of 60.75 cents must be maintained, a part with the Reserve Bank and a part in the vaults of the member banks. This means that as demand deposits increase, the member banks, assuming that they have no excess gold in their own vaults, will be forced to increase their stock of gold by drawing gold from the Reserve Bank.

Against each $1 of Federal Reserve notes issued, a reserve of 40 cents in gold must be maintained.

To determine the maximum expansibility of the banks in this example, the excess gold reserves of the Reserve Bank of New York must be divided into two parts so that their ratio will be as 60.75 is to 40. The first part is to be the gold upon which increased deposit credits are to be erected, which will be kept partly with the Reserve Bank and partly with the member banks in the proportion of 45 to 15.75, and the second part is to be the basis upon which increased issues of Federal Reserve notes are to be erected.

Laying aside a gold reserve of 200 millions of dollars against its notes and of 350 millions against its deposits, the New York Federal Reserve Bank will have excess gold reserves amounting to 450 millions.

Dividing this sum into two parts so that their ratio will be as 60.75 is to 40, we find that the two parts will amount in round numbers to 270 millions and to 180 millions.

The first part, 270 millions, is the gold upon which the increased deposit credits are to be erected. As explained above, this will be kept partly with the member banks and partly with the Reserve Bank in the proportion of 45 to 15.75, i. e. 200 millions will be held by the member banks and 70 millions by the reserve Banks. Upon the basis of the 200 millions held by them, member banks could expand their deposits by 1111 millions. The seventy millions of dollars in gold held by the Reserve Banks form the basis of 200 millions of dollars of member bank deposits with the Reserve Banks upon which member banks might expand their deposit credits by an additional 1111 millions. The deposits of member banks, therefore, could expand by 2222 millions.

On the basis of the 180 millions, Federal Reserve notes might expand by 450 millions.

These two figures, 2222 millions and 450 millions, are to each other approximately as 5 is to 1, one of the conditions of the problem.

Including both notes and deposits, the banking system has expanded by 2672 millions on the basis of 450 millions of free gold in the Reserve Bank. In the course of this expansion the Reserve Bank would have lost 200 millions in gold, withdrawn by the member banks to maintain their vault reserve against their deposits, so that its gold stock would have declined from one billion to 800 millions. At the end of the operation the Reserve Bank would have 950 millions of Reserve notes outstanding, 1200 millions of deposits and 800 millions in gold, or a reserve of 37.2% against these liabilities.[32]

Expansibility after the Passage of the 1917 Amendments:

Let us now compute the expansibility of these same banks, with the assets and liabilities as given above, after the adoption of the 1917 amendments, assuming as we did before that for every increase of $5 in demand deposits there is an increase of $1 in Federal Reserve notes.

Against $5 of demand deposits the member banks must maintain a reserve amounting to 13%, or 65 cents, as a deposit account with the Reserve Bank. Against a deposit account of 65 cents, the Reserve Bank would have to maintain a reserve equal to 35% or amounting in this case to 22.75 cents.

Against each $1 of Federal Reserve notes issued, the Reserve Bank would have to maintain a reserve in gold amounting to 40 cents.

Our problem then becomes one of dividing the excess reserves of the Federal Reserve bank, 450 millions, into two parts so that their ratio shall be as 40 is to 22.75.

The two parts in round numbers will be 287 millions and 163 millions.

[32] In this problem we assume that the Reserve Bank's reserve against its deposits is maintained wholly in the form of gold, whereas it may be maintained in the form of gold or lawful money, and we assume that as the demand deposits of member banks increase, they will replenish their vault reserves by drawing gold from the Reserve System whereas they might have had excess reserves or might have imported gold from abroad.

For a discussion of the expansibility of the Federal Reserve System, see *Monthly Review* of the Federal Reserve Bank of New York, September 1921, p. 12.

The first part is to be used as a basis for 717.5 millions of notes. The second part, 163 millions, is to be used as the base upon which deposit credits are to be erected. On this the Reserve Banks could increase their own deposit liabilities by 466 millions, on the basis of which member banks could increase their deposit liabilities by 3580 millions. Add to this 717.5 millions of Reserve notes and the total is 4297.5 millions.

Before the passage of the 1917 amendments the banks in the example we have selected could expand, at the maximum, by 2672 millions, while after the enactment of the amendments they might expand by 4297.5 millions. In our problem we have not taken account of the fact that after the passage of the amendment the member banks would have to carry some till money, mostly in the form of Reserve notes, amounting to perhaps 3% of their demand deposits. There can be no question but that the expansibility of the American banking system was greatly increased by the 1917 amendments, perhaps by as much as 50%.[33]

The reduction brought about through this change was altogether excessive. The member banks lost all responsibility for conserving the gold supply of the nation, maintaining specie payments, and controlling credit expansions since they no longer held any portion of their reserves in their own vaults. The result of this was to make them less disposed to check overextensions of credit, and to make them feel that the onus rested entirely on the Federal Reserve System. The amendment should never have been enacted and certainly should now be repealed, since the war emergency which gave rise to it has long since passed. The situation would be greatly remedied if the Act were altered to require member banks to hold one-half of their present reserve requirements in their own vaults and to keep the other half with the Reserve Banks. This change would lower the potential expansibility of the banking system and would make the gold reserve of the Reserve Banks more responsive to fluctuations in deposit credits, for an increase in the deposits of the member banks would lead to a drain of gold. The gold resources of the Reserve Banks would still be sufficiently large to enable them to exercise control over credit expansions, to engage in open-market operations, to enter into foreign exchange trans-

[33] Contrary to the idea commonly held at the time the ability of a banking system to expand is no indication of its real strength. See *Federal Reserve Bulletin*, 1917, p. 581.

actions, and to make mobile commercial banking funds throughout the country.

Efforts Made to Induce State Banks to Join the Federal Reserve System. Upon the entrance of America into the war, the Reserve Board and the Regional Banks entered upon a vigorous campaign to induce state banks to join the System. The object of the campaign was really two-fold; first, the officials of the Reserve System realized that a growth in the membership of state banks would increase its gold holdings, and second, state banks as members would have privileges of discounting and borrowing from the Reserve Banks, which would assist in loosening up credit and in assuring the success of the Liberty bond flotations. State banks were themselves showing a greater interest in the question of membership, were looking at it "with a seriousness that they otherwise perhaps would not have felt."[34] Many concluded that as the war progressed membership would be very advantageous and that they would have greater and greater need of the Reserve System.

Less than fifty state banks belonged to the Federal Reserve System at the time America entered the war. This, the *Federal Reserve Bulletin* declared, was the weak point in the financial preparation of the country for the coming conflict.[35] The advantages of membership had not appeared real to state bankers.[36] Reliance on the Federal Reserve System they felt was unnecessary, in view of the ease of the money market and the low interest rates prevailing during 1915 and 1916.[37] Should they be forced to borrow they could secure funds on more liberal terms from their city correspondents. The feeling was prevalent among many state banks, whether justified or not, that they would have little paper eligible for rediscount. The Reserve Banks paid no interest on bankers' balances, while city correspondents generally paid 2%. The dividends borne by Federal Reserve Bank stock, even if fully paid, seemed quite low to many state bankers who could invest their funds at a higher yield. State banks wanted assurance that they might with ease withdraw from the System.

[34] *Federal Reserve Bulletin*, 1917, p. 429.

[35] *Ibid.*, p. 335.

[36] For a discussion of the relationship of state banks to the Federal Reserve System, see Reed, *The Development of Federal Reserve Policy*, Chapter III; and Tippetts, *State Banks and the Federal Reserve System*, a thesis in preparation at Princeton University under the direction of Professor Kemmerer.

[37] *Federal Reserve Bulletin*, 1917, pp. 335–336.

Few understood the purpose and functions of the Reserve System and many had doubts of its success.

To allay their fears membership was made more attractive to state banks by the passage of amendments to the Reserve Act on June 21, 1917, which were really an enactment of certain previous regulations of the Board.[38] State banks desiring to withdraw from the System were permitted to do so after a six months' written notice had been filed with the Reserve Board and upon the surrender and cancellation of all of their holdings of Federal Reserve Bank stock. State Banks were also assured that they would retain their full charter and statutory rights subject to the provisions of the Reserve Act and the regulations of the Board.

With the passage of these amendments the time seemed opportune to carry on even more intensively the campaign of inducing state banks to join and appeal was made to their feelings of patriotism. On October 13, 1917, Woodrow Wilson issued a statement through the Federal Reserve Board urging state banks eligible for membership to join so that the banking strength of America might be concentrated and the gold resources consolidated with the Reserve System.[39] "The extent to which our country can withstand the financial strains for which we must be prepared," Wilson declared, "will depend very largely upon the strength and staying power of the Federal Reserve Banks." Coöperation with, and membership in, the System, he concluded, is a distinct and significant evidence of patriotism. Through the last half of 1917 and through 1918, the *Federal Reserve Bulletin* was filled with articles dwelling on the advantages of membership from the point of view of state banks, with speeches delivered by men prominent in banking circles urging state banks to join, and with communications from member state banks giving the reasons for their joining and the advantages accruing therefrom.

This drive on the part of the officials of the System met with considerable success. The growth in the membership of state banks is given in the following table:[40]

[38] *Fourth Annual Report of the Federal Reserve Board*, p. 13. The amendment may be found in the *Federal Reserve Bulletin*, 1917, pp. 511–518.

[39] Wilson's statement may be found in the *Federal Reserve Bulletin*, 1917, pp. 827–828.

[40] Sources: *Federal Reserve Bulletin*, 1918, p. 965.
Fourth Annual Report of the Federal Reserve Board, p. 14.

Date	*Number*	*Resources*
June 21, 1917	53	$ 825,000,000
End of August, 1917	77	1,173,795,000
End of October, 1917	177	3,083,853,000
December 31, 1917	250	5,013,885,000
End of February, 1918	343	5,327,110,000
May 10, 1918	449	5,938,746,000
September 1, 1918	713	6,575,800,000
November 1, 1918	847	7,144,076,000
January 1, 1919	936	7,338,813,000

By January 1, 1919, 936 state banks had become members, or about 11% of the state banks reported as eligible for membership [41] had joined. These were, however, the larger and more important of the banks, and their resources amounted to over seven billions, or equal to 54% of the resources of all the eligible state banks.

Impounding the Gold of Non-Member State Banks. Since all state banks were not eligible for membership in the System, and since some that were eligible were still unwilling to join, other methods had to be employed to effect a transference of their gold holdings to the vaults of the Reserve Banks. In the first place, the Legislatures of six states were persuaded to modify their banking acts to permit state banks to keep a part or the whole of their required reserve as balances with the Reserve Banks, or in the form of Federal Reserve notes in their own vaults. These six states were [42] Connecticut, Massachusetts, New Mexico, New York,[43] Vermont and Virginia. In addition, the Banking Commissioner of Wisconsin had signified his willing-

Fifth Annual Report of the Federal Reserve Board, pp. 26–27, and correspondence with Federal Reserve Board.

[41] Some 8500 state banks and trust companies were considered eligible for membership.

Fifth Annual Report of the Federal Reserve Board, p. 25.

[42] *Federal Reserve Bulletin*, 1917, pp. 768–795.

[43] The Federal Reserve Bank of New York on August 10, 1917, sent out a circular letter to the non-member banks in New York state requesting that they keep the part of their reserve allowed by law with the Reserve Bank and that as they received gold or gold certificates over the counter they should send these to the Reserve Bank and receive Reserve notes in exchange. (*The Commercial and Financial Chronicle*, August 1917, pp. 760–761).

ness to approve of the Federal Reserve Bank of Chicago as a legal depositary. Eight states, California, Connecticut, Massachusetts, Minnesota, Missouri, New Hampshire, New York, and Pennsylvania expressly permitted some or all of the state banks to carry a part or the whole of their vault reserve in the form of Federal Reserve notes.[44] In order to encourage non-member banks to keep accounts with the Reserve Banks, Section 13 was amended on June 21, 1917, to authorize the Reserve Banks, solely for the purposes of collection or exchange, to receive deposits of currency, checks, drafts and maturing notes and bills from any non-member bank which maintained with the Reserve Bank a balance sufficient to offset the items in transit held for its account by the Reserve Bank.[45] Whether a non-member bank kept its required reserve with a Reserve Bank or kept it in the form of Federal Reserve notes in its own vault, made no difference, so far as increasing the gold holdings of the Reserve Banks was concerned.

Impounding the Gold in Circulation. The measures described so far, i. e., forcing member banks to maintain their entire reserve with the Reserve Banks, encouraging state banks to join, holding the reserves of non-member state banks, inducing states to allow banks to keep part or all of their vault reserve in the form of Reserve notes, receiving clearance accounts from state banks, all had for their purpose the transferring of gold from commercial banks to the vaults of the Reserve Banks and thereby making easier the way of inflation. These measures, however, were not sufficient in themselves to draw the whole monetary stock of gold into the Reserve Banks or to conserve that which might become impounded in their vaults. Over a billion dollars in gold and gold certificates were in circulation. This had to be impounded. In order to sweep in the gold and gold certificates in circulation and to enable the Reserve Banks to retain all of the gold impounded, changes were made in the provisions governing the issue of Reserve notes. Heretofore, a Federal Reserve Bank desiring Reserve notes had to turn over to its Reserve Agent collateral security equal in amount to the notes applied for. The collateral might consist of drafts, bills of

[44] Such permission was provocative of inflation to the extent that Federal Reserve notes with a 40% gold reserve were substituted for gold, gold coin or gold certificates. See testimony of Governor Strong of the Federal Reserve Bank of New York, *Hearing before the Joint Commission of Agricultural Inquiry*, 67th Congress, 1st Session, part 13, p. 537.

[45] *Federal Reserve Bulletin*, 1917, pp. 513–514.

exchange or acceptances (excluding the fifteen-day collateral notes) rediscounted under the provisions of Section 13, or bills of exchange endorsed by a member bank and purchased under the provisons of Section 14. As the Reserve Banks circulated these notes, they were required to set aside a reserve in gold amounting to 40% of the notes paid out. Against issues of Federal Reserve notes, therefore, a reserve of 140% was required. It is important to note with regard to these provisions that Federal Reserve notes could not be issued against gold and gold certificates [46] and could be issued directly against commercial paper alone. Consequently, had the Reserve Banks followed the spirit of the Act prior to June, 1917, the expansibility of Federal Reserve notes would have depended upon the amount of commercial paper in their portfolios. It was apparent that there would not be sufficient eligible paper to permit Federal Reserve notes to expand in proportion to the increase of bank deposits resulting from war financing. The increases which were about to take place in the deposits of commercial banks would arise not from a growth in their holdings of commercial paper but from the addition of great quantities of war paper to their portfolios. The amount of commercial paper, therefore, against which Reserve notes might be issued would become proportionately smaller at the very time that deposit currency and the need for money would be increasing. The provisions of the Act, therefore, had to be changed to allow the issue of Reserve notes against the notes of member banks or their customers, collateraled by government obligations. Unless this were done gold or gold certificates would be withdrawn from the Reserve Banks to meet the currency requirements arising from expanding bank deposits and the System's efforts in impounding the gold stock of the country would be defeated. The Act was altered, therefore, to allow the Reserve Agents to issue Reserve notes against:

1) Gold and gold certificates.
2) Notes, drafts, and bills of exchange or acceptances, acquired

[46] Federal Reserve Banks before June 21, 1917, did in an indirect manner, explained in a previous Chapter (p. 189, note #40.), issue Reserve notes against gold. In doing this they violated the spirit if not the letter of the Act. As a result of this action on the part of the Reserve Banks, the Agents of the twelve Banks held on April 5–6, 1917, $378,450,000 in gold against $400,698,000 of notes issued by them. The Federal Reserve note at that time was virtually a gold certificate. (*Federal Reserve Bulletin*, 1917, p. 418).

under the provisions of Section thirteen of the Act, including the fifteen-day collateral notes of member banks.

3) Bills of exchange indorsed by a member bank and purchased under the provisions of Section fourteen of the Act and banker's acceptances purchased under the provisions of the same section.

Since the gold acquired by the Agent was to count as part of the reserve against notes, this amendment lowered the reserve requirement from 140 to 100%. Professor Sprague has estimated that these provisions enabled the Reserve Banks to sweep from 500 to 750 millions of dollars of gold or gold certificates into their vaults.[47] What is of greater significance, however, is the fact that the amendment enabled the Reserve Banks to retain the gold which they had acquired. They were not forced to pay out gold, as the monetary demand increased, but could retain their gold stock and pay out Reserve notes. Despite the tremendous importances of these changes, they received scant attention in the Congressional debates.

Making a Place for Federal Reserve Notes. The Treasury Department immediately set about to make a "place" for increased issues of Reserve notes. Large Greenbacks were converted into denominations of $1, $2 and $5.[48] On October 5, 1917, an act [49] was passed authorizing each national bank to issue not more than $25,000 of national bank notes in denominations of $1 and $2, and to issue notes in denominations of $5 on the same basis as larger denominations. Federal Reserve notes were then issued to meet the need of currency of larger denominations.

The Reserve Board Approved of the Impounding of Gold. The Reserve Board, if we may judge from their official pronouncements, heartily endorsed all the measures taken to impound and conserve gold in the vaults of the Regional Banks. In the *Federal Reserve Bulletin* for August 1, 1918, the statement is made that "ever since the establishment of Federal Reserve Banks the Board has endeavored by every legitimate means to increase the aggregate gold holdings of the banks." [50] The *Bulletin*

[47] Sprague, *The Discount Policy of the Federal Reserve Banks*, p. 18.

[48] *Federal Reserve Bulletin*, 1917, p. 833.

[49] *Ibid.*, pp. 837–838. By the act of March 14, 1900, National Banks were permitted to circulate not more than ⅓ of their notes in denominations of five dollars.

[50] P. 694. The Federal Advisory Council rubber stamped the policies of the Board in this particular. See *Fifth Annual Report of the Federal Reserve Board*, pp. 765–870.

added that while great quantities of gold and gold certificates had been transferred to the vaults of the Reserve Banks, large amounts were still outstanding which should be deposited with the System. The purpose of the Reserve Banks in desiring the impounding of gold, the Board declared, was perfectly clear, for "in proportion as the gold holdings of the Federal Reserve Banks are increased the ability of such banks to extend accommodation to other banks or to issue notes is enlarged." Likewise, Governor Harding in 1918 stated that "for more than two years past the Federal Reserve Board has repeatedly and insistently urged that all gold coin in this country be transferred to the vaults of the Federal Reserve Banks." [51] The Board in recommending the amendments of 1917 which served to do this very thing, labored under the same Mercantilist delusions as did the central banks of Europe in feeling that a nation's success on the field of battle must be in direct proportion to the expansibility of its banking system.

Efforts to conserve the stock of gold in the United States and to protect the nation's supply proceeded so far as to discourage the use of gold as Christmas gifts,[52] and even the use of gold counting machines lest they wear out the coins.[53] The unwillingness of the Reserve Banks to pay out gold readily upon demand meant the abandonment of the gold standard in domestic transactions and would have resulted in a premium on gold if the war had continued. In fact, a gold premium did appear in Chinatown in San Francisco.

The Abandonment of the Gold Standard. Treasury officials were convinced of the necessity of preventing unauthorized exports of gold as a part of their policy of conserving its supply. By a Presidential proclamation issued on September 7, 1917,[54] under authority of the Espionage Act, an

[51] Harding, *Maintaining and Strengthening the Nation's Gold Reserve*, p. 565.

[52] *Federal Reserve Bulletin*, 1917, p. 931. Discouraging gold as Christmas gifts continued as late as the Christmas of 1921.

[53] *Federal Reserve Bulletin*, 1917, p. 440. The Federal Reserve Bank of Chicago is accused of altogether refusing to pay out gold. (*The Commercial and Financial Chronicle*, February 1, 1919, p. 425.) The Chicago Bank seemingly took this action even though the Board had declared that the payment in gold of domestic obligations was not to be interfered with during time of war. (*Federal Reserve Bulletin*, 1917, p. 734.)

[54] This proclamation is printed in *The Commercial and Financial Chronicle*, September 15, 1917, p. 1046. The members of the Federal Reserve Board were unanimously opposed to the imposition of the gold embargo. See Willis, *The Federal Reserve System*, p. 1248.

embargo effective September 10 was placed on exports of coin, bullion and currency. The embargo applied to all nations, both enemy and neutral, and its effect was to place absolute control over exports of coin, bullion and currency in the hands of the Secretary of the Treasury and the Federal Reserve Board. This proclamation supplemented the President's general export embargo proclamation of August 27, 1917.[55] In an executive order issued on the same date as the embargo proclamation, the President announced that the following regulations would govern applications for gold exports:[56]

1) Individuals, firms or corporations desiring to export coin, bullion or currency from the United States or from any of its territorial possessions to any of the foreign countries named in the proclamation must first file an application in triplicate with the Federal Reserve Bank of the district in which the individual, firm or corporation is located. The application must state the nature of the transaction, the amount involved, the parties directly and indirectly interested and such other information as the authorities might require.

2) Each Federal Reserve Bank must keep a copy of each transaction and shall forward the original and a duplicate copy to the Federal Reserve Board with its recommendations.

3) The Board, subject to the approval of the Secretary of the Treasury, was authorized to permit the exportation if it were compatible with the public interest, otherwise to refuse it.

Officials in Washington justified the embargo on several grounds. As a result of America's entry into the war and her extension of huge credits to the Allies, an almost complete cessation of the inward flow of gold occurred. Coincident with the stoppage of

[55] This proclamation declared that the exportation of gold from the United States or its terriorial possessions on or after August 30, 1917, to Germany and her allies or to the parts of Europe occupied by German troops, or to Albania, Denmark, Greece, Lichtenstein, Luxembourg, Netherlands, Norway, Spain, Sweden, Switzerland or Turkey should not take place excepting subject to the limitations, exemptions and regulations prescribed by the President. (*The Commercial and Financial Chronicle*, September 1, 1917, p. 864.) The proclamation of September 7 extended this list of nations to include practically the rest of the world.

Prior to the proclamation of September 7 no legal compulsion had been placed on banks to state the amount of their exports of gold. A few did consider it their patriotic duty to inform the Federal Reserve Banks when they intended to ship gold. (See *Wall Street Journal*, August 29, 1917.)

[56] *Fourth Annual Report of the Federal Reserve Board*, p. 21.

the inward flow of gold, there developed a strong outward movement to those neutrals from whom America and her Allies were purchasing raw materials.[57] While the exports of specie were ostensibly going to neutral nations, it was thought that some of this gold might seep into Germany.[58] Further, if the outward flow were to continue, the Treasury Department feared that the money market in America might become "tight," which would interfere with its plans for floating Liberty bonds at low rates of interest.[59] Following the lead of America, Japan placed restrictions on exports of gold within a week after President Wilson had issued his proclamation.[60] Similar action was taken by all of the belligerents and most of the neutrals during the Great War.

The question might well be asked,—why is it that nations have placed such emphasis upon gold, why is it that every effort is made to concentrate gold in the vaults of central banks during time of war and to prevent unauthorized exports? There seem to be two chief reasons:

1) As has been stated before in this Chapter, the larger the gold resources of a central bank, the greater is its power of expansion. Since nations are not always able to pay war costs through the levying of taxes and through the sale of bonds paid for from savings, central banks are called upon to extend credit to their Governments and to inflate. The larger their gold resources the more they may expand without having their percentage of gold reserves fall to a figure so low as to obviate the possibility of returning to a gold basis at the conclusion of hostilities.

2) The possession of gold by a belligerent power which has to import a large part of its war materials may facilitate such importations. Thus England and France sent gold to America, before our participation in the war, as part payment for the goods they purchased and as a means of loosening up credit so that they could borrow money on easier terms and sell their nationals' holdings of securities on a rising market.

[57] Large shipments in August of 1917 caused the Board to advise the Reserve Banks to keep in close touch with gold movements. (*Federal Reserve Bulletin*, 1917, pp. 655–656).

[58] It might be noted here that the possession of gold would not have aided Germany nearly so much as the possession of copper, rubber, etc.

[59] See *Federal Reserve Bulletin*, 1919, p. 616, for a statement of the Board's reasons for levying the gold embargo.

[60] *The Commercial and Financial Chronicle*, September 22, 1917, p. 1150.

The Levying of the Gold Embargo Not Justified. Restrictions placed upon free movements of gold by nations producing their own war materials, as did Germany and America, are without justification. Especially in America does the President's proclamation seem unwarranted, when we consider the fact that exports of gold during the first eight months of 1917 amounted to 317 millions, a fraction of the amounts imported during 1915 and 1916, and when we calculate America's "favorable" balance of trade with the world in general. It is probable that not more than 400 millions in gold would have been exported had the embargo not been levied. Other consequences would have been:

1) The dollar would not have depreciated in those nations with which America had an adverse balance of payments by reason of heavy purchases of war supplies, such as Spain, Chile, Argentina, India, China, Bolivia and Switzerland.[61] The depreciation of the dollar in those countries increased America's difficulties in purchasing goods and forced America to resort to at least two expedients to rectify the unfavorable exchanges; (a) the shipment of silver to settle international balances wherever possible and (b) the formulation of exchange agreements.[62]

2) At the conclusion of the war the gold reserves of the Federal

[61] The statement was frequently made that the dollar was depreciated in neutral nations by reason of the fact that sterling was "pegged" to the dollar, and because of this the dollar moved in harmony with sterling, depreciating as it depreciated and appreciating as it appreciated. (See *Federal Reserve Bulletin*, 1918, p. 839.)

Sterling had been pegged since the fall of 1915 at 4.76 7/16, or at a discount of approximately two per cent., in reality at the gold export point considering the increased cost of freight, insurance, etc. Through 1915 and 1916 rates on peseta sight drafts, taking 19.3 = 100, varied from 97.93 to 110.10, or from 18.9 to 21.25. (*Federal Reserve Bulletin*, 1918, p. 839.) During the period of the gold embargo peseta sight drafts rose to 54% above parity. Before the gold embargo through 1915 and 1916 the dollar was at a premium in Spain for 9 out of the 24 months and at a slight discount for 15 months, even though sterling was pegged. The depreciation of the dollar in Spain during the period of the gold embargo can only be accounted for by the restrictions placed by the American government on gold movements and not by the pegging of sterling. In other words, fluctuations in dollar exchange prompted fluctuations in sterling, and not vice versa. It is estimated that prior to April, 1917, it cost England a billion dollars a year to peg sterling. During her participation in the war, America agreed to finance the pegging of sterling. Mr. Hepburn declared that the Secretary of the Treasury had no idea what he was about when he agreed to do this. (*The Commercial and Financial Chronicle*, May 1920, p. 2138.)

[62] Exchange agreements were entered into with Argentina, Bolivia,

Reserve Banks would have been smaller by the amount of gold shipped to settle international balances, which might have meant that the Treasury Department would have been less ready to resort to inflationary tactics in the Victory Loan and that the Reserve Banks would have been free to raise their discount rates. If such had been the case the post-armistice rise in prices would have been prevented.

3) Gold would not have been hoarded. It has been estimated that 300 millions of dollars in gold was hoarded in America during the war.[63]

4) Had America not imposed the embargo, the prestige of New York as a financial center would have been greatly enhanced, for it would have been the one financial center which remained on a gold basis through the war.

Any thought, however, of maintaining a free gold market was brushed aside. The embargo was levied and the gold standard abandoned.[64]

Further Restrictions on Movements of Gold. As early as October 1917, the Federal Reserve Board deemed it necessary to take measures controlling the practice of "earmarking" gold in the United States for foreign account.[65] The "earmarking" of gold, so the Board explained, segregated specified sums of gold in bank vaults and had the same effect on the available gold stock of the country as would the exportation of a like quantity. The Board requested the Reserve Banks to have all banking in-

Switzerland, the Indian Government, Spain and the drafting of such agreements was taken up with Chile, Uruguay and Peru.

[63] *Federal Reserve Bulletin*, 1919, p. 616.

[64] By the gold standard is meant:

1) The unconditional redemption of all forms of money in gold.
2) The free flow of gold from monetary uses into the arts, and vice versa.
3) The free and unlimited coinage of gold.
4) Unrestricted international movements of gold.

In the *Federal Reserve Bulletin* for December 1, 1918 (p. 1167) the statement is made that there never had been "any suspension of the parity of our currency with gold." While it is true that there was no widespread specific depreciation of paper money in America, this statement is misleading in that we might infer that the gold standard had not been abandoned. The gold standard was abandoned and had the war continued undoubtedly there would have been widespread specific depreciation.

The imposition of the gold embargo made it necessary to exercise control over the foreign exchanges. Authority to do so was provided by Section Five of Trading with the Enemy Act (approved October 6, 1917).

[65] *Federal Reserve Bulletin*, 1917, pp. 733–734.

stitutions furnish complete statements regarding the amount of gold held in custody by them and directed that no more gold be "earmarked" for foreign account except upon the approval of the Board. Postmaster-General Burleson on September 26, 1917, issued an order prohibiting the transmission of United States coin and currency, or domestic and foreign gold coins, or gold bullion through the regular or parcel-post mails to countries outside of the United States and its possessions.[66] On or about January 1, 1918, the War Trade Board assumed the task of controlling the exportation of manufactures of gold and silver when the metal value of the article shipped was small as compared with the cost of labor or other material employed in its production.[67] A number of rulings were issued by it covering such exports. In July of 1918 a ruling was issued to the effect that on and after the 29th no licenses were to be issued, with certain exceptions, for the exportation of gold manufactures unless the selling price of the articles was not less than three times the value of the fine gold content contained therein.[68] Members of the crews of ships anchoring in American harbors were forbidden to take gold coin or certificates, or silver coin or certificates from the United States.[69] This applied also to officers and men attached to the United States army.[70] Travelers were limited in the amount of currency which they might take with them in going abroad.[71] For a while even sales of gold to jewelers by the New York assay office was stopped.[72]

Movements of Gold during the Existence of the Gold Embargo. During the existence of the gold embargo, the Board issued some 1142 licenses for the exportation of $153,326,976 of gold.[73] Imports of gold from September 1, 1917 to June 1, 1919 amounted to $114,647,000 while actual exports amounted to $109,353,000, the net inward movement amounting then to $5,294,000. Announcement was made by the Board on June 9, 1919, that henceforth licenses for movements of gold and currency would be freely granted excepting for imports and exports of ruble notes and for exchange operations with territories in respect of

[66] *The Commercial and Financial Chronicle*, October 6, 1917, p. 1354, and May 18, 1918, p. 2064.

[67] *Federal Reserve Bulletin*, 1918, p. 10.

[68] *The Commercial and Financial Chronicle*, August 3, 1918, p. 444.

[69] *Ibid.*, May 1, 1918, p. 1955.

[70] *Ibid.*, August 3, 1918, p. 443.

[71] *Fifth Annual Report of the Federal Reserve Board*, p. 36.

[72] *The Commercial and Financial Chronicle*, August 31, 1918, p. 844.

[73] *Sixth Annual Report of the Federal Reserve Board*, p. 51.

which such transactions were permitted only through the American Relief Administration.[74] This action, the Board stated, had been taken after consultation with the Secretary of the Treasury and with the approval of the President and had been decided upon because it was felt that a very large outward movement could take place without any danger by reason of the size of the excess reserves of the Regional Banks.[75] The termination of the gold embargo had been recommended by the Federal Advisory Council at its annual meeting on November 19, 1918.[76] The Committee on War Finance of the American Economic Association made the same recommendation a little later.[77] By an order issued on June 26, 1919, President Wilson removed all restrictions on transfers of credit and exchange operations and exports of coin, bullion and currency except to those parts of Russia controlled by the Bolshevik Government.[78]

Accelerating the Production of Gold. Not only did the Government in the ways described endeavor to conserve the gold supply of the United States but it also took positive steps to accelerate the production of the yellow metal. At the request of the Treasury Department, the War Industries Board ruled on July 19, 1918, that gold mining was an essential industry and entitled to all reasonable priorities in the matter of supplies and materials.[79]

The efforts of all warring nations to conserve and increase the supply of gold convinced gold producers that theirs was indeed an essential industry. If gold was of such great importance was it not only logical, they argued, that nations should assist gold producers during this period when gold was being mined at a constantly increasing expense. Gold producers throughout the world, in Australia, in South Africa[80] and in

[74] Restrictions had been imposed on the domestic use of gold and silver for industrial purposes were ended on November 18, 1918, through an announcement made by B. M. Baruch, Chairman of the War Industries Board. (*The Commercial and Financial Chronicle*, November 23, 1918, p. 1954.)

[75] *The Commercial and Financial Chronicle*, June 14, 1919, pp. 2385–2386.

[76] *Federal Reserve Bulletin*, 1918, p. 1177.

[77] *Report of the Committee on War Finance of the American Economic Association*, p. 117.

[78] *Sixth Annual Report of the Federal Reserve Board*, p. 50.

[79] *The Commercial and Financial Chronicle*, July 27, 1918, p. 340.

[80] For statement of the Australian and South African Governments regarding the question of the gold bonus, see *The Commercial and Financial Chronicle*, July 20, 1918, p. 226 and March 29 1919, p. 1214 and the *Report*

America demanded that their industry be subsidized, that they be paid a bonus for the mining of gold. Beginning about the middle of 1918,[81] American gold producers were very insistent that the Government come to their rescue. Their demands finally culminated in the McFadden Bill which was introduced in the House of Representatives on March 22, 1920.[82] In America their demands were opposed by at least three Secretaries of the Treasury,[83] by committees appointed by the American Economic Association,[84] by Secretary Lane,[85] and by the American Bankers Association.[86] The McFadden Bill, supported as it was by a large coterie of Senators and Representatives from the mining states, was reported on favorably by a sub-committee of the

of the Gold Production Committee appointed by the Lord Commissioners of His Majesty's Treasury, England.

[81] In August of 1918 a meeting called by Governor E. D. Boyle of Nevada and attended by 96 representative gold producers (the American Gold Conference) was held at Reno for the purpose of inducing the Government to take suitable steps towards helping gold mining. (*The Commercial and Financial Chronicle*, August 24, 1918, p. 745.)

For a discussion of this question, see:

Kemmerer, *Doing Something for Gold*, and Professors Seligman and Kemmerer's statements in *Exhibits in Support of Memorandum* Submitted by the Jewelers' Vigilance Committee, inc., to the Sub-Committee of the Committee on Ways and Means of House of Representatives, in Opposition to McFadden Bill, H. R., 13201, 66th Congress, Third Session.

[82] *The Commercial and Financial Chronicle*, March 27, 1920, p. 1243. Representative McFadden's bill was based on a plan approved by the American Mining Congress on November 21, 1919, at its annual convention in St. Louis.

[83] On November 2, 1918, Secretary McAdoo appointed a Special Gold Committee to consider and report on the entire question of subsidizing gold producers. After a complete survey of the problem, the Commission unanimously agreed in a report submitted February 11, 1919, that no steps should be taken by the Government to stimulate the production of gold. (This report may be found in the *Annual Report of the Secretary of the Treasury on the State of the Finances*, 1919, pp. 108–110.) Secretary Houston expressed his opposition in the *Finance Report* for 1920, p. 181, and Secretary Mellon in the *Finance Report* for 1921, pp. 90–91, and 376–378.

[84] See *Report of the Committee on War Finance of the American Economics Association*, pp. 116–117.

[85] Secretary Lane's Committee made its report on January 5, 1919 (*Federal Reserve Bulletin*, 1919, pp. 124–126).

[86] The Gold Bonus Committee of the American Bankers Association made its report at the annual convention of the A. B. A. held in Washington, October 19–22, 1920. It reported that the McFadden Bill would aggravate the very conditions it sought to remedy. (*The Commercial and Financial Chronicle*, October 23, 1920, pp. 1616–1617.)

Ways and Means Committee of the House,[87] but was never reported upon favorably by the whole committee, and never reached a vote in either House of Congress. Those opposed to the gold bonus bill realized that one of the most important factors accounting for the increase in prices in America from 1914 on was the huge importations of gold. The supply of gold had increased, its value had fallen. The granting of a gold bonus would simply serve to stimulate the production of gold at a time when it was so cheap relative to other commodities that gold producers were operating at a disadvantage. Were the production of gold to be stimulated by a bonus, its supply in money uses would be larger and the price level would rise, which would force gold producers to request an increased bonus, and so on, *ad infinitum*. The solution of the gold miners' problems lay in deflation and not in further inflation.

Summary of Gold Policy of American Government. The gold policy of the American Government involved not only the restriction of gold shipments abroad and the discouragement of the domestic use of gold, but also the stimulation of gold production (so far as this could be accomplished without reliance upon a bonus) and the impounding of gold in the vaults of the Reserve Banks. For all practical purposes America abandoned the gold standard. Gold was concentrated in the vaults of the Reserve Banks and so far as possible was not allowed to be withdrawn. Silver was substituted in settling international balances and in cases where this was not possible exchange agreements were effected. The gold reserves of the Reserve Banks increased as member banks, state banks and the public turned in their holdings. This, coupled with the reduction in the reserves of member banks, kept interest rates at artificially low levels and made inflation easy. Upon the increasing gold holdings of the Reserve Banks, the superstructure of currency and credit was erected to dizzy heights. Finally, at the insistence of the Treasury Department, the System framed its discount policy to render easier the erection of this superstructure.

The War Discount Policy of the Reserve Banks. During the war period the Reserve Banks shaped their discount policies to harmonize with the Treasury Department's plans of war finance. The Treasury Department had determined upon floating government obligations at low rates of interest. The Secre-

[87] On March 2, 1921. (*The Commercial and Financial Chronicle*, March 5, 1921, p. 890.)

tary thought that the payment of high rates would enable bond holders to become wealthier,[88] and in some mysterious way he linked high interest rates with inflation, feeling that prices would be forced up by the payment of rates commensurate with the market rates then prevailing.[89] The Federal Reserve Banks, acting in accordance with the advice of the Board, fixed their discount rates in order to facilitate McAdoo's program. It is quite possible that the System did not enter upon this voluntarily, but was forced to do so by pressure from the Treasury Department. Whatever may have been the case, the Board erred in not publicly stating their position and in not throwing the responsibility for this action entirely upon the Treasury Department.

Interest Paid on Liberty Bonds. The first Liberty Loan bonds, authorized by the Act approved April 24, 1917, which were exempt from all taxes excepting inheritance and estate, were floated at 3½% interest. The tax exempt feature[90] made the issue very attractive and induced the wealthy to subscribe heavily to escape the income tax which they knew would shortly be raised. America floated subsequent issues of Liberty Bonds at rates varying from 4–4¼% and floated the Victory loan notes at 3¾ and 4¾%. English war loans were floated to yield from 4 to 6%.[91] All of Canada's war loans yielded over 5% and one was sold to yield 5.8%.[92] The Australian war bonds yielded over 4.6%.[93] The long-term war loans were floated in France to yield from 5.58 to 6.52%.[94] The first German war loan, dated October

[88] *Finance Report*, 1918, p. 14. The Secretary's policy in engendering inflation did enable certain classes to become wealthy.

[89] *Finance Report*, 1918, p. 47 and *Federal Reserve Bulletin*, 1918, p. 589.

Mr. R. C. Leffingwell, Assistant Secretary of the Treasury under McAdoo, held the same idea; "I doubt whether higher rates of interest on Liberty Bonds, which would have meant more taxes for the taxpayer and more spending money for the bondholder, would have had any other effect than to increase the inflation which has been rampant since the Victory Loan." (*Treasury Methods of Financing the War in Relation to Inflation*, p. 26)

[90] For tables showing advantage in yield of tax-exempt bonds, see *Report of the Committee on War Finance of the American Economic Association*, p. 135; and article by Otto Kahn, *The Commercial and Financial Chronicle*, June 2, 1917, p. 2187.

[91] *Federal Reserve Bulletin*, 1918, p. 1070.

[92] *Canada YearBook*, 1921, pp. 656–657 *and Federal Reserve Bulletin*, 1918, p. 1070.

[93] *Federal Reserve Bulletin*, 1918, p. 1070.

[94] Friedman, *International Finance*, pp. 104–105.

1, 1914, was floated to yield 5.59%, while subsequent issues yielded slightly less.[95] Switzerland's mobilization loans yielded from 4.70 to 5.45% and Holland's from 4.15 to 5%.[96]

The first Liberties were dated June 15, 1917. At that time the rate of interest on sixty to ninety day commercial paper in New York was 5%, on four-six months paper was 5.28%, and on ten selected American railway bonds was 4.76%.[97] In spite of this and in spite of the yields of the bonds issued by other nations during the war (some of whom were in fully as strong a credit position as the United States) the Treasury Department decided to float the first Liberties at 3½%, relying upon the tax-exempt features to carry the issue.[98]

Treasury's Policy Generally Condemned. The action of the Treasury Department in floating the war loans at such low interest rates roused the condemnation of scores of economists, bankers and men in public life. Professor Plehn in his work entitled *Public Finance* states that the payment of low rates of interest was false economy, that America was penny wise but pound foolish, that such a policy engendered inflation, weakened the credit of the nation and hurt each subsequent loan.[99] Professor Fetter has pointed out that by reason of the low interest rates Liberty bonds had to be marketed by popular coercion.[100] Professor Kemmerer makes the point that it was because rates were kept low that prices bulged upwards.[101]

[95] *Federal Reserve Bulletin*, 1918, p. 1071.

[96] *Ibid.*

[97] *Harvard Economic Review*, Preliminary Vol. I, pp. 91, 95 and 99.

[98] The Treasury Department has come to rue the day when tax-exempt bonds were issued. The objections to the issuance of tax-exempt obligations are:

1) To the extent that such bonds are sold government revenues are dried up.

2) A class of tax-exempt individuals is created which is repugnant to our ideas of democracy in taxation. The law of capitalization does not work out perfectly.

3) Industry finds it more difficult to secure credit.

See Professor Seligman's testimony before the Ways and Means Committee of the House of Representatives on Tax-Exempt Securities, January 19, 1922, pp. 99–115. Professor Seligman estimated that the Government lost 300 millions in taxes while the increased interest charges had it floated taxable bonds would have amounted to but from 100–150 millions.

In the spring of 1917, Professor Seligman recommended that the first Liberty Loan be taxable and floated at 5 per cent.

[99] pp. 407–408.

[100] Fetter, *Modern Economic Problems*, p. 135.

[101] Kemmerer, *High Prices and Deflation.*

What would have been the consequences had the Treasury Department floated its obligations at market rates of interest?

1) It would have been easier to lodge the bonds with the ultimate investor, for it is a truism that the higher the rate of interest the more are people inclined to save. Because the bonds would have been lodged to a greater extent with the ultimate investor and because they would not have depreciated to such an extent in the post-war period, purchasers would not have been so inclined to dispose of them either from need of funds or from the desire to invest in more attractive ways.
2) Because people would have been more inclined to save in order to purchase bonds, and less inclined to borrow, the Federal Reserve System would not have been compelled to resort to inflationary tactics. Prices in the war and post-armistice period would not have risen to the same extent. Credit could have been controlled through fluctuations in the Bank rate.
3) Since prices would have been lower, the Government would have had to float fewer bonds and in this manner would have been fully compensated for the increased interest charges.
4) Such a policy would have tended to transfer existing capital from non-essential and low-rate investments to government bonds thereby absorbing free capital, discouraging non-essential production and reducing consumption.

Certificates of Indebtedness Floated at Rates below the Market. The Treasury Department necessarily floated the certificates of indebtedness at rates commensurate with the interest paid on government bonds. These rates were considerably below those borne by English Treasury notes. In the accompanying chart a comparison is made between the rates borne by certificates of indebtedness, and the Bank rate in New York on fifteen day advances collateralled by the certificates.

It will be noted that in its endeavor to coöperate the Reserve Banks bettered the Treasury Department, as the Bank rate ruled below the issue rate on certificates.

Bank Rate below the Market. The Treasury Department had established its policy and the Reserve Banks were forced to

Mr. Hepburn has stated that the apparent saving to the Government in the low rate of interest cost the people of the country many times that in the depreciation of their securities and in inflation. A Discussion of Professor Cassel's Article, *The Annals*, May 1920, p. 283.

adjust their rates accordingly. Throughout the whole war period the Bank rate was below the market.[102]

In October and November of 1917 the difference was as much as 1½%.

Compare this record with that of the Bank of England. Throughout the war the Bank rate there was maintained, as has

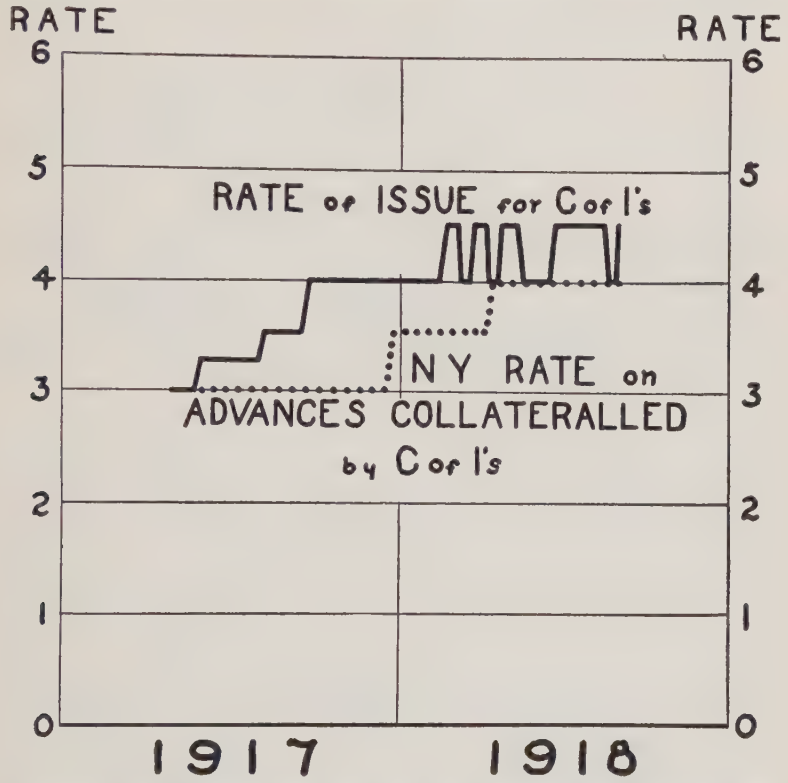


Chart XIV: Variations in the Rate of Issue for Certificates of Indebtedness Compared with the Bank Rate at the Federal Reserve Bank of New York on Advances Collateralled by Certificates of Indebtedness.

been the policy of the Bank for generations, above market rates.[103] The Bank rate in England is applicable of course only to bankers' bills and is not strictly comparable with the Bank rate

[102] Source: *Hearing before the Joint Commission of Agricultural Inquiry*, part 13, p. 562.

[103] *Ibid.*

in America. Even though this is true the important thing is, that the Bank of England maintains its rates on the paper it is willing to discount, on the paper which serves as a vehicle for letting its funds out into the market, at rates above those prevailing in the market. Compelled by the Treasury, the Reserve

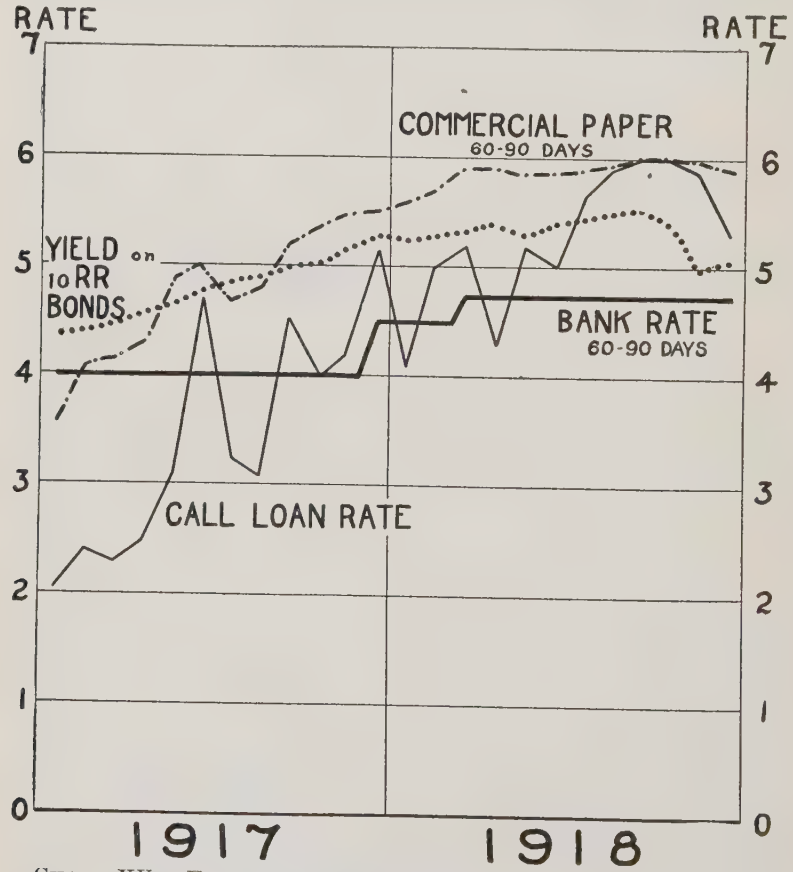


Chart XV: Fluctuations in the Bank Rate at the Federal Reserve Bank of New York Compared with Fluctuations in Market Rates.

Banks were forced to maintain their rates at figures inordinately low, lower than the Bank rates prevailing at any of the other important central reserve banks.[104]

[104] Source of data: Courtesy of the Reports Department, Federal Reserve Bank of New York.

Did the Treasury feel that the Reserve Banks could defy those economic forces which had compelled the central banks in Europe to maintain their rates at higher levels? That the policy of establishing the Bank rate at such low figures was a mistake is now generally admitted even within the System itself. Governor

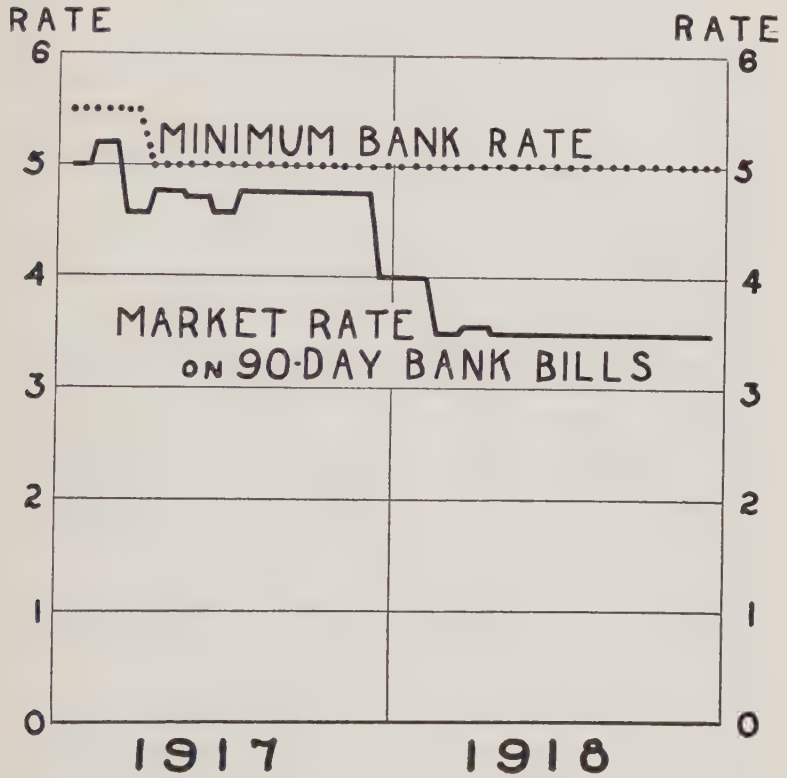


Chart XVI: Fluctuations in the Bank Rate at the Bank of England Compared with Fluctuations in the Market Rate.

As regards the Bank rates prevalent during the war Professor Cassel has said: "In the whole world the rates of discount have been too low during the war. The real scarcity of capital would have commanded a much higher rate of interest than the 5 or 6 per cent. which have generally prevailed but which have only been the result of a continual falsification of the money market. Even now, after the war, the world's need of capital is so great, in comparison with the scanty supply, that a real equilibrium can be attained only by aid of higher rates of interest than those generally prevailing." *Some Leading Propositions for an International Discussion of the World's Monetary Problem*, p. 264.

Harding in testifying before the Senate and House Committees on Agriculture and Forestry declared: [105]

> The Federal Reserve Board adopted a policy in order to assist in the war financing which was economically unsound. I say this frankly. Congress authorized certain loans. It authorized the Secretary of the Treasury to determine the rates at which the loans should be issued. The Secretary of the Treasury asked the advice of experts and then fixed the rates of interest to be borne

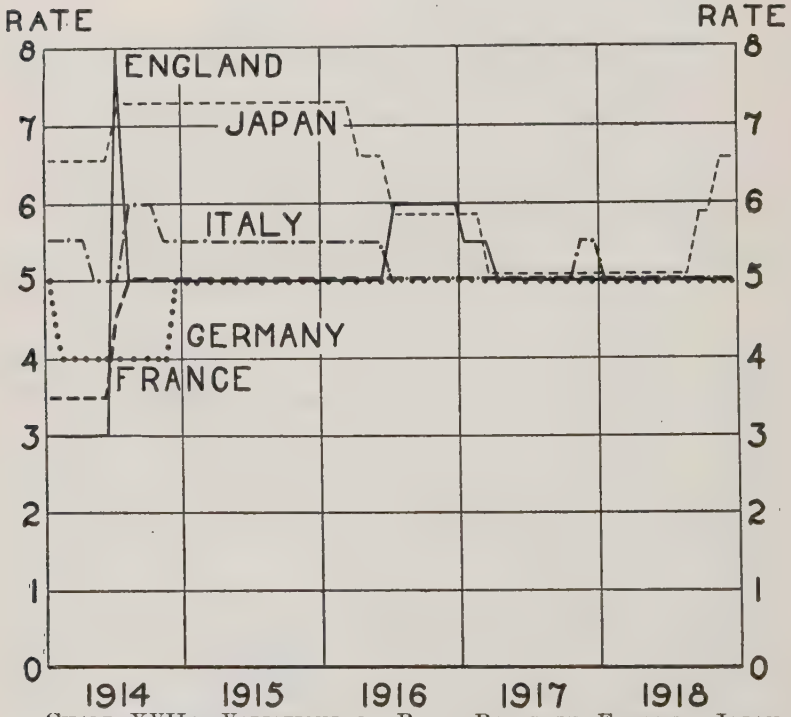


Chart XVII: Variations in Bank Rates in England, Japan, Italy, and France, 1914–1918.

by the several issues of bonds, notes, and certificates. During the time we were actually at war, something like $18,000,000,000 of bonds were sold to the people, an amount certainly in excess of the normal investment power of the American people in such a short time, and the only way in which those loans could be financed was

[105] *Reviving the Activities of the War Finance Corporation.* Part I, p. 62.

through the instrumentality of the banks. The only way the banks could undertake to do it was to get some assistance from the Federal reserve banks and at a low rate. The low rate of interest borne by these bonds was fixed with a view of holding down the expenses of the Government as far as possible. Anyway, that is something the Federal Reserve Board has no responsibility for.

Likewise, in the *Sixth Annual Report of the Federal Reserves Board* the confession is made that the Bank rates should have been higher than market rates during the war period and that this normally should be the case.

The Course of the Bank Rate. After America entered the war the Board took up the question of establishing preferential rates in favor of the short-term notes of member banks collateralled by government obligations.[106] As a result of these deliberations the Board announced on May 22, that it would permit Reserve Banks to establish preferential rates of 3½% on notes, drafts, and bills of exchange drawn by customers of banks, and indorsed by member banks, having a maturity not in excess of ninety days, and secured by Liberty bonds or by United States certificates of indebtedness. This step, the Board stated, was taken with a view to aiding member banks in placing bonds in the hands of actual investors who might not be able to pay their subscriptions in full at the time of receiving the bonds. The Board advised banks that it was their patriotic duty to avail themselves of the rates then existing on fifteen-day collateral notes which ranged from 3–3½%. Money rates, the Board declared, would in this manner be kept "easy." On June 13, a 2–4% rate was established at the New York Federal Reserve Bank on member banks' one-day collateral notes, for the purpose of restoring to the market funds temporarily withdrawn through government loan operations.[107] As the war continued changes were made in rates of discount corresponding to changes in the interest rate borne by government obligations. Alterations in discount rates affected primarily the fifteen- and ninety-day rates on war paper since this type of paper constituted about 90% of all the discounts made by the Reserve Banks during the war period.

Rates of discount on different classes of paper scarcely varied through this period from one Regional Bank to another. Irre-

[106] *Federal Reserve Bulletin*, 1917, p. 425.
[107] *Fourth Annual Report of Federal Reserve Board*, pp. 6, 37, and 256.

spective of the economic development of the different sections the Bank rates remained pretty much the same and fluctuated together. For this reason, changes in the Bank rates at the New York Federal Reserve Bank are taken as typical of all and are presented in the table on pp. 286 and 287.[108]

The increases in December 1917 were a recognition, according to the Board, of the changed conditions in the demand for and supply of loan capital throughout the nation. The Board hoped that these increases might warn member banks against rediscounting too freely.[109] This was a futile hope, inasmuch as the Bank rates remained below the market and as the Government's fiscal operations forced banks to rediscount. During December of 1917 several rates were combined to bring about a greater simplicity in discount rate classification.[110]

A survey of this table shows that the following policies were followed by the System in fixing rates:

1) Preferential rates were granted to paper secured by government war obligations. Such a practice is almost an unheard of thing in central banking.[111] In Europe the customary practice has been to discriminate against paper collateraled by securities, government or otherwise, and to charge on such paper a rate of interest ranging from ½ of 1% to 1% above the Bank rate. In

[108] Sources of table:
Fourth Annual Report of the Federal Reserve Board, pp. 37–40.
Fifth Annual Report of the Federal Reserve Board, pp. 5–8.
Rates on paper secured by War Finance Corporation Bonds were established April 11, 1919, at 1 per cent. in excess of the rate applicable on commercial paper of corresponding maturity and were automatically discontinued effective April 1, 1920 coincident with the maturity of all outstanding War Finance Corporation Bonds. (*Discount Rates of the Federal Reserve Banks*, p. 7)

[109] *Federal Reserve Bureau*, 1917, p. 923.

[110] *Ibid.*, 1918, p. 66.

[111] "Such a policy may have been justified by the necessity of selling bonds; but, whatever the reason, it was a great departure from the fundamental principles of the Federal Reserve Act. It favored, instead of discriminated against, loans based on securities as collateral. That an enormous change should take place in the character of the liquid holdings of the system was certain. Consequently, it was inevitable that difficulties should arise, and that at the end of 1919 the rate on loans secured by war obligations should be raised to 5½ per cent. in order to force their liquidation, no matter how painful the process might be. It is a question whether the rates should not have been raised on this kind of paper long before. The rise in the rate of discount should be used as a preventive rather than as a cure." Laughlin, *Banking Progress*, pp. 284–285.

America, on the other hand, commercial paper was discriminated against. Banks were encouraged, as a part of the Government's policy, to dump securities into the Reserve Banks. Discounts based on paper arising from actual commercial transactions were discouraged.

2) The preferential rates granted on paper secured by government war obligations fluctuated with the interest borne by these obligations.

3) In comparison with rates prevailing on commercial paper, a differential of $\frac{1}{4}$–$\frac{1}{2}$ of 1% was maintained in favor of trade acceptances, while a differential of from $\frac{3}{4}$ of 1%–2% was maintained on bankers' acceptances purchased in the open market. The acceptances of shorter maturity were taken at the lower rates.

4) Through the twelve districts Bank rates for each class of paper were maintained at practically the same figure and were changed simultaneously (with changes in the New York rates anticipating changes in other districts by a few days). This shows that the Reserve Banks had abandoned what initiative they might have possessed in fixing rates and acted wholly in accord with the advice of the Board.[112]

Selling Certificates of Indebtedness. An understanding of the methods used by a Government in floating its war obligations is a prerequisite for any discussion of the discount operations of central reserve banks. If bonds and short-term notes are paid for entirely from savings, the responsibilities of central banks and the social consequences of such action are quite different than if such obligations are paid for through "manufactured" credit.

On March 31, 1917, the Secretary of the Treasury sold fifty millions of dollars of 2% ninety-day certificates of indebtedness directly to the twelve Federal Reserve Banks in anticipation of the corporation and individual income taxes due in June.[113] The

[112] The regional idea should permit a close adaptation of rates to the economic conditions prevailing in each section. (See Miller, *Federal Reserve Policy*, p. 194.) In fixing rates the regional plan of organization has not been taken advantage of. In 1917 the calculated annual rate of earnings on the total investment holdings (assuming that this is a good index of rates charged) of the twelve Banks averaged 3.31%, ranging from 3.15% in New York to 3.69% in Boston; in 1918, this averaged 4.12%, ranging from 3.97 in New York to 4.35 in Kansas City. The rates were practically uniform over the country whereas some discrepancy should have existed.

[113] The proceeds were used partly to purchase the Danish West Indies and partly to meet the current needs of the Treasury. (*Federal Reserve Bulletin*, 1917, pp. 337–338).

BANK RATES IN FORCE AT THE FEDERAL RESERVE BANK OF NEW YORK DURING 1917 AND 1918

Rates borne by Liberty Bonds		*Dates on which bank rates were put into effect*	*War Paper*		*Commercial paper.*		
Rate	Date of Issue		*Paper including member banks' collateral notes secured by U. S. certificates of indebtedness or Liberty loan bonds maturing within 15 days*	*Paper secured by war obligations maturing from within 16–90 days*	*Discounts including member banks' collateral notes maturing within 15 days*	*Paper maturing within 16–60 days*	*Paper maturing within 61–90 days*
I. 3½%	June 15, 1917	Jan. 1, 1917	.....	.....	.....3.....	.....4.....	.....4.....
II. 4	Nov. 15, 1917	May 22,	.....3[a].....	.....3½.....	.....	.....	.....
III. 4¼	May 9, 1918						
IV. 4¼	Oct. 24, 1918	Dec. 21,	.....3½.....	.....4.....	.....3½.....	.....4½.....	.....4½.....
		Jan. 1, 1918	.....3½.....	.....4.....	.....3½.....	.....4½.....	.....4½.....
		April 6	.....4.....	.....4¼.....	.....4.....	.....4¾.....	.....4¾.....

[a] Rate of 2 to 4% on member banks' one day collateral notes in connection with the loan operations of the Government established June 13, 1917, and raised to 3–4½% on December 21, 1917.

BANK RATES IN FORCE AT THE FEDERAL RESERVE BANK OF NEW YORK DURING 1917 AND 1918

Rates borne by Liberty Bonds		*Dates on which bank rates were put into effect*	*Trade Acceptances*		*Agricultural Paper*	*Bankers' Acceptances*
			Maturing within 1 to 60 days [b]	*Maturing within 61 to 90 days*	*Agricultural and live-stock paper maturing within 91 to 180 days*	*Open Market rates on bankers' acceptances maturing within 3 months* [a]
Rate	Date of Issue					
I. 3½%	June 15, 1917	Jan. 1, 1917	3½	3½	5	2–4
II. 4	Nov. 15, 1917	May 22,				2½ (March 30)
III. 4¼	May 9, 1918					3–4½ (December 7)
IV. 4¼	Oct. 24, 1918	Dec. 21,	4	4		
		Jan. 1, 1918	4	4	5	
		April 6	4½	4½		4

[a] Rates for discounted banker's acceptances maturing within fifteen days, 4%, within 16–60 days, 4¼%, and within 61–90 days, 4½%.

[b] Whenever the sixty-day rate on trade acceptances is higher than the fifteen-day commercial paper rate, the latter applies also to trade acceptances with maturities of fifteen days or less.

certificates were held by the Reserve Banks until maturity and paid for through the simple process of crediting the deposit account of the Government. With the entrance of America into the war this first issue was followed by a systematic use of certificates of indebtedness sold primarily to member banks [114] and funded in due course of time into long-term bonds. Such short-term loans had been made use of in previous wars and in periods of financial strain; they were employed in the war of 1812, in 1837, in the Mexican War, in 1857, in the Civil War, and in 1907, under such names as "treasury notes," "treasury bills" and "bills of credit." [115] At the outbreak of a war the issue of certificates is legitimate and necessary. Funds must be secured quickly until the proceeds from loans and taxes become available. In the late war, however, certificates of indebtedness were not confined to this use, but were "employed . . . to keep the Treasury in funds for war expenditure, by issue in anticipation of the proceeds of funded loans and extraordinary taxes. In short, the war has been largely financed by resort to short-term borrowings, periodically liquidated from the proceeds of long-term loans and to a less extent from the proceeds of war taxes." [116]

From time to time as the Secretary of the Treasury deemed it necessary to issue certificates, the Reserve Banks were notified and temporarily allotted a certain portion of the whole. They in turn notified the banks of the district and invited them to subscribe.[117] The first few issues were paid for by the purchasing banks in current funds which were then redeposited with banks duly qualified to serve as government depositaries. Beginning with the issue of August 29, 1917, depositing banks were permitted to make payment by book credit for the certificates

[114] Banks were in fact compelled to purchase certificates. See *The Commercial and Financial Chronicle,* March 1918, p. 1131; July 1918, p. 349; *Federal Reserve Bulletin,* 1918, p. 153; *Finance Report,* 1918, pp. 20–22. The Comptroller of the Currency in his annual report for 1917 (Vol. I, pp. 152–154) printed the names of the national banks which had not subscribed to the First and Second Liberty Loans.

[115] Hollander, *War Borrowing,* pp. 7–8.

[116] *Ibid.,* p. 74.

[117] The Reserve Board early in the war urged banks to purchase certificates of indebtedness as a highly desirable investment. (*Federal Reserve Bulletin,* 1917, p. 338). On the other hand the Board cautioned banks, as holders of the liquid cash resources of the nation, against buying bonds. (*Ibid.,* p. 337). This is rather an unwarranted distinction. Through frequent renewals certificates may become as unliquid as bonds.

purchased up to the amount for which each had qualified as a depositary.[118] In most cases the certificates were left with the Reserve Bank as collateral against the deposits created by the purchasing banks.[119] Banks which had not qualified as depositaries were required to make payment by check, draft, or cash, but the Treasury Department in such instances undertook to redeposit the unexpended proceeds of the subscriptions as promptly as such banks qualified.

Payment by credit was encouraged by the Reserve Banks, for it was felt that in this way the money market would not be even temporarily disturbed. When the depositary banks were called upon by the Treasury for any portion of the amount credited to the Government on their books, they commonly remitted it by borrowing from their Reserve Bank with the certificates as collateral. The rediscounting facilities of the Reserve Banks were thus made use of by the subscribing banks to pay for the certificates purchased. The practice was carried to such an extent that the Board felt called upon, in August of 1918, to admonish the subscribing banks to pay for their allotments with cash.[120] This advice could not be followed by commercial banks for the policy of the Treasury in compelling them to subscribe beyond their own immediate resources forced them in turn to borrow from the Reserve Banks.[121]

From April 6, 1917, to the armistice, 13,437 millions of dollars worth of tax and loan certificates were sold. From then until the Summer of 1923 the sales have totaled 21,375 millions of dollars. The great majority of those issued prior to the armis-

[118] Payment by bank credit is justified by R. C. Leffingwell, Assistant Secretary of Treasury during the war period, as follows:

"'Payment by credit' is a device for permitting the banking institutions which purchase Government securities to defer payment for them until the Government actually needs the money. It was adopted to prevent money stringency. It developed the further advantage that in the difference between the rate borne by the securities and the rate charged on the deposit, banks found some compensation for their time, trouble, and the loss of deposits resulting from the sale of securities to investors." *Treasury Methods of Financing the War in Relation to Inflation,* p. 29.

[119] The securities acceptable as collateral against government deposits were greatly enlarged during the war. (*The Financial Review,* 1918, p. 31.)

[120] *Federal Reserve Bulletin,* 1918, p. 686.

[121] Occasionally the Treasury Department would sell certificates of indebtedness to the Reserve Banks to run for one or two days to cover an overdraft or to anticipate funds to be withdrawn from depository banks. The Pittman certificates were sold to the Reserve Banks and some of the Reserve Banks purchased ordinary certificates in small amounts.

tice, about 80%, were purchased by banks, leaving only a small percentage to be accounted for by individuals, firms and corporations. In fact, it was not until 1919 that individuals and corporations began to purchase certificates to any great extent. The low rate of interest borne by them prevented this.[122]

If, as Professor Hollander suggests, there had been an initial issue of certificates paid for from savings and followed by a succession of long-term bond issues payable in evenly distributed serial installments and sufficient to extinguish the existing short-term indebtedness and to obviate further interim borrowing, and if such bonds were themselves purchased from savings, the chief factor in the rise of prices would have been eliminated.[123] But by and large the certificates sold in America were purchased not from current funds, secured through reducing commercial loans, but through the creation of government deposits (fiat credit) against which the subscribing bank, which had qualified as a depositary, was required to hold no reserve.[124]

The Sale of Liberty Bonds. The Treasury Department found it necessary to have four Liberty Loan campaigns during the war and a Victory Loan immediately following the armistice. It was by means of these loans that the certificates of indebtedness were funded. The proceeds of each loan, in fact, were scarcely more than sufficient to redeem the previously issued certificates. If the Liberty bonds had been purchased from savings, the inflation engendered by the fiat credit created to purchase the certificates would have been short-lived. Following each issue of certificates prices would, of course, have tended upwards. If, however, subscribers had paid for their bonds from savings, their demand for goods would have declined, as the government's demand increased and the inflationary effects re-

[122] The low rate of interest at which the certificates were sold forced the Reserve Banks during the war to go into the market after each issue and buy certificates at their par value in order to prevent their depreciation.

[123] Hollander, *War Borrowing,* p. 192.

The use of certificates caused inflation in England also, Kirkaldy, *British Finance During and After the War, 1914–1921,* p. 160.

The Joint Commission of Agricultural Inquiry, *Credit,* p. 83, reported that certificates of indebtedness were more important as a factor in creating bank deposits and in expansion than the Liberty bond and Victory notes. See also statement by Secretary Houston, *Federal Reserve Bulletin,* 1920. p. 553.

[124] Secretary Shaw had ruled in 1903 that national banks should be exempt from holding reserves against government deposits. This was legalized by the First Liberty Loan Act. (Hollander, *War Borrowing,* p. 33.)

sulting from the manner in which certificates of indebtedness were sold would have been offset. As it was, the sale of Liberty bonds simply intensified the process.

During the first three Liberty loan campaigns the Government encouraged subscribers to borrow from their banks in order to buy bonds.[125] The commercial banks were in turn to borrow from the Reserve Banks and were enabled to do so at preferential rates and up to the full par value of the bonds. Some bonds were, of course, purchased with cash or by tendering certificates of indebtedness. Especially in the first Liberty loan cash was used to a very large extent in purchasing bonds. The reason for this was that the wealthy were anxious to invest their funds in tax-exempt securities. The first loan took up what "slack" existed; the others were financed to an increasing extent by inflation.

With each successive Liberty Loan drive the loans of the Reserve Banks and of commercial banks increased as credit was pyramided to purchase the bonds. The growth of the loans and investments of commercial banks resulting from war financing is illustrated in the following table:[126]

Reporting Member Banks				
Date	*Number*	*U. S. securities other than to secure circulation*	*Loans secured by U. S. war obligations*	*Ratio of U. S. war obligations and paper secured by such obligations to total investments*
		(000 omitted)		
Jan. 4, 1918	640	$ 746,779	$ 423,832	10.7%
Feb. 1	675	955,724	371,966	11.8
Mar. 1	676	1,437,249	344,986	14.9
Apr. 5	679	1,456,009	318,302	14.8
May 3	686	1,900,885	311,937	17.8

[125] Many subscribers bought Liberty bonds by borrowing on the basis of previous Liberty loans. Moulton, *Financial Organization of Society,* p. 630. In another place he states: "It is true that one Liberty loan was not wholly paid for out of savings before another was issued, or before new treasury certificates were placed with the banks. There necessarily tended to be considerable overlapping; and the banks were thus furnished a permanent quantum of new currency derived from an extension of bank credits." *War Finance and the Price Level,* p. 694.

For a statement of the relationship of bonds sales and inflation, see *Report of Joint Commission of Agricultural Inquiry, Credit,* Part II, pp. 81–82.

[126] Sources: *Federal Reserve Bulletin,* 1918, pp. 1110 and 1249; and 1919, p. 92.

Reporting Member Banks

Date	*Number*	*U. S. securities other than to secure circulation*	*Loans secured by U. S. war obligations*	*Ratio of U. S. war obligations and paper secured by such obligations to total investments*
		(000 omitted)		
June 7	688	$1,621,472	$ 522,528	17.2%
July 5	711	1,192,271	484,337	13.4
Aug. 2	725	1,371,312	501,669	14.7
Sept. 6	735	1,721,307	470,074	16.9
Oct. 4	749	2,247,923	493,164	20.3
Nov. 1	751	1,881,564	1,243,057	22.2
Dec. 6	755	1,760,154	1,277,516	22.2

While comparable figures are not available for 1917, the trend is shown in the following table giving the security holdings of national banks.[127]

Government Securities Owned by National Banks

(000,000 omitted)

1917	
March 5	$ 715
May 1	768
June 20	1076
September 11	1159
November 20	2354
December 31	1625

"The object of this elaborate scheme—this pyramid of credit—is to supply the Government with the means to go off and fight the war by itself, leaving us, the people, to go on with business as usual, undisturbed. The only weakness in the scheme is that it does not provide the Government with army, navy or equipment."[128] The Federal Reserve Bank of New York described the result of the process in the following terms: "During the war the Federal Reserve Bank as fiscal agent of the Government had to encourage a programme of 'borrow and buy,' among banks in order that they might buy certificates of indebtedness far in excess of their available funds, and among individuals that they might buy bonds far in excess of their current savings. The result was an immense increase in the loan accounts of the member banks, and a proportionately great in-

[127] *Federal Reserve Bulletin*, 1919, p. 782.

[128] Monthly Bulletin, National City Bank of New York, February 1918, p. 3.

crease in their rediscounts with the Federal Reserve Bank." [129]

The Bond Purchase Fund. The low interest rate on government bonds and the manner used by the Treasury in forcing persons to subscribe for them, meant inevitably that large amounts would be thrown upon the market. To prevent their prices from sinking to such low figures that the credit of the Government might seem to be impaired, the Second Liberty Loan Act provided for a bond purchase fund.[130] By selling certificates of indebtedness and by using the proceeds to buy bonds on the New York Stock Exchange, the prices of Liberty bonds were stabilized. In all the Treasury purchased $1,966,000,000 of bonds for this purpose [131] discontinuing purchases on June 30, 1920. At the same time that the Treasury Department was purchasing bonds in this manner, it was waging a campaign to induce investors to hold their bonds, declaring that their sale was unpatriotic.[132] It was absurd and undignified for the Treasury Department to float bonds at rates of interest artificially low and then to be forced to sell certificates of indebtedness in order to secure funds with which to maintain their price by purchasing them on the Stock Exchange. It was also arbitrary and presumptuous to force people to subscribe beyond their means and then to brand them as unpatriotic when they were forced to dispose of their holdings.[133]

Discounts of the Reserve Banks during the War Period.

[129] *Report on Business Conditions,* Federal Reserve Bank of New York, November 20, 1919, p. 1.

[130] By a provision of Section fifteen of the Second Liberty bond act (as amended), the Secretary of the Treasury might purchase bonds to one year after the war not to exceed one-twentieth of the par amount of the bonds outstanding and at an average price of not more than par and accrued interest.

[131] Letter from the Commissioner of the Public Debt. This figure represents the face value of the bonds bought.

[132] *Finance Report,* 1917, p. 3; and 1920, p. 109.

[133] . . . "there never was a more undignified proceeding inaugurated than the propaganda to float Government bonds and sell them to the public at more than they were worth. The Liberty Bond Committees took possession of our theatres, between the acts; they came into our banking institutions and induced them in many cases to subscribe for more than they could pay for."

"What the Government should have done was to have paid a fair price for money, paid what the bonds of the State of Massachusetts, or Minnesota, or New York were paying; they never should have offered bonds to the public at any lesser rate than the first credit existing in the country commanded. Had that been done, the twenty-two million who subscribed for bonds at one issue would have kept them and the bonds would have remained near par." Hepburn, *Discussion of Government's Financial Policies in Relation to Inflation,* p. 57.

DISCOUNT OPERATIONS OF THE RESERVE
(000

	Paper maturing within 15 days		*Paper maturing after 15 but within 30 days*	
Fed. Reserve Bank of	1917	1918	1917	1918
Boston	$174,166	$1,412,040	$39,878	$33,825
New York	6,344,747	23,789,632	20,186	83,990
Philadelphia	175,777	1,684,240	12,287	21,355
Cleveland	146,746	1,221,212	26,101	32,171
Richmond	350,331	1,990,255	9,670	28,889
Atlanta	63,721	829,320	6,746	18,399
Chicago	412,463	2,973,625	26,327	47,779
St. Louis	131,800	919,153	15,036	33,403
Minneapolis	39,634	240,879	6,308	27,591
Kansas City	209,901	632,162	5,577	20,540
Dallas	34,058	463,304	1,625	21,453
San Francisco	45,941	750,886	13,543	14,516
Total	8,129,286	36,906,711	183,284	383,901
	Of this amount $5,884,161 consisted of member-banks' collateral notes secured by government obligations	Of this amount $33,390,080 consisted of member-banks' collateral notes secured by government obligations		

The discount operations of the Reserve Banks during 1917 and 1918 are given in the accompanying table.[134] From this it will be observed:

1) that advances made on member banks' collateral notes account for 85% of all discounts in 1917 and for 81% in 1918. If the monthly figures were consulted it would be seen that these reach a peak during each Liberty loan drive and show a close correlation with issues of certificates of indebtedness.

2) that discounts of commercial paper maturing after sixty but within ninety days were much larger in amount than discounts of 15–30 day paper or 30–60 day paper. In 1915 most of the commercial paper discounted matured after thirty but within sixty days; and in 1916, after ten but within thirty days.[135]

3) that discounts of agricultural and live-stock paper increased greatly in 1918.

4) that discounts of trade acceptances increased. During the war period the Reserve Banks encouraged the use of the trade accept-

[134] Source of table:
Fourth Annual Report of Federal Reserve Board, pp. 96–103.
Fifth Annual Report of Federal Reserve Board, pp. 154–167.

[135] The average maturity of all paper discounted in 1918 was 11.81 days. This figure results from the volume of advances made on member banks'

Banks in 1917 and 1918 omitted)

Paper maturing after 30 but within 60 days		*Paper maturing after 60 but within 90 days*		*Trade Acceptances*		*Agricultural and live stock paper*	
1917	1918	1917	1918	1917	1918	1917	1918
$41,673	$60,249	$94,006	$251,881	$6,115	$10,287	$1,196	$2,289
62,676	169,910	108,838	490,107	6,864	70,677	13	1,899
9,790	28,963	25,531	95,204	726	5,650	31	3,836
18,874	47,594	19,387	84,062	4,401	24,894	68	1,078
18,673	60,044	21,251	77,557	3,160	13,389	1,296	3,100
14,097	36,383	9,499	43,427	4,562	11,697	1,052	2,600
45,664	103,541	29,866	122,634	430	9,033	7,551	18,271
18,214	63,220	20,660	65,776	3,114	15,681	408	3,585
17,829	42,588	15,859	104,581	364	799	5,532	18,153
8,735	53,728	12,876	65,849	2,646	10,401	5,605	61,242
6,140	37,687	10,103	49,114	178	2,057	5,127	23,066
23,602	50,570	18,642	101,406	5,210	12,807	1,253	17,127
285,967	754,479	386,518	1,551,597	37,771	187,373	29,131	156,246

ance by granting preferential rates. It was the desire of the officials of the System to have business men convert their accounts receivable into trade acceptances in order that they might have an obligation rediscountable at the Reserve Banks and in order that that their accounts might be in a more liquid condition.

In 1917 the Federal Reserve Bank of New York discounted 72.6% of the bills discounted by the System; in 1918 it discounted 61.8%. In 1916 it had discounted but 10.7% and in 1915, 3%.[136] The increase in the discounts of the New York Bank resulted from the vast amount of government obligations floated in that district and from the fact that commercial banks in New York City were called upon to finance numerous banks throughout the interior. The New York Bank was looked upon by the Government as its chief fiscal agent through whom it liked to conduct its fiscal operations with the other Reserve Banks.

Number of Banks Seeking Accommodation. As the war progressed and as banks relied more and more upon the Reserve System, the number of banks rediscounting increased many fold. In November of 1918, 3667 banks rediscounted, the largest number rediscounting during any single month through this period, representing 42.5% of the membership.[137]

collateral notes. *Fifth Annual Report of the Federal Reserve Board*, p. 171.

136 *Fifth Annual Report of the Federal Reserve Board*, p. 161.

137 Source of chart:
Fourth Annual Report of Federal Reserve Board, p. 118.
Fifth Annual Report of Federal Reserve Bank, pp. 170 and 206.

Before America's entrance into the war the largest number rediscounting during any single month was 835 in November 1915, or 10.9% of the membership.

As illustrative of the extent to which member banks borrowed from the Reserve Banks the table [138] on p. 297 has been inserted

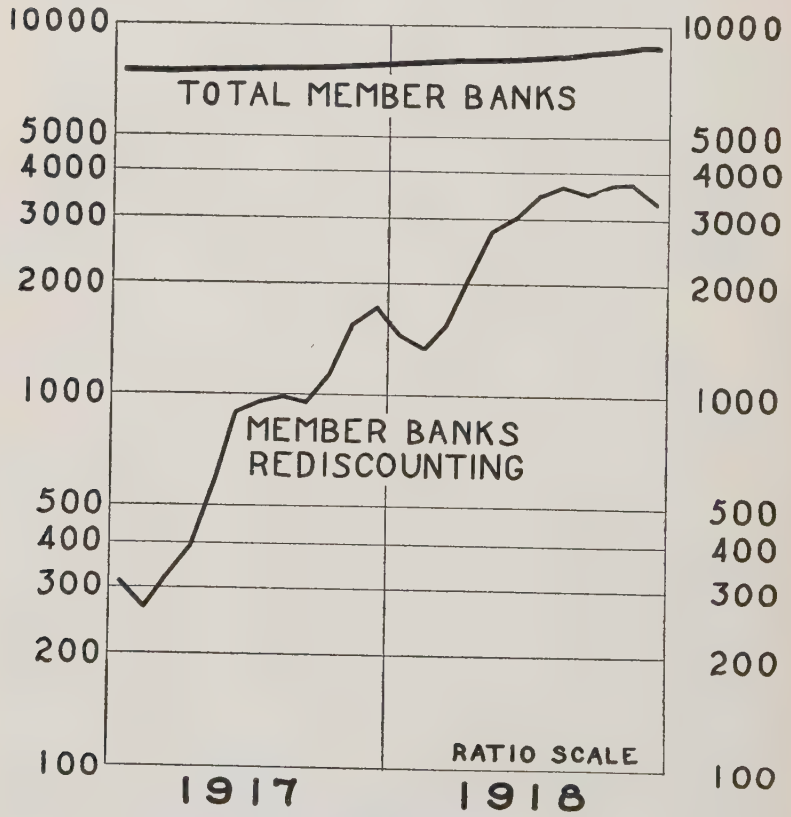


Chart XVIII: Number of Member Banks Rediscounting Compared with Total Number of Member Banks.

which compares their borrowings from the Reserve Banks (bills discounted) with their ownership of Reserve Bank stock plus their deposits with the Reserve Banks. It will be noted that by

[138] Source of table:
Fourth Annual Report of Federal Reserve Board, pp. 64–67.
Fifth Annual Report of Federal Reserve Bank, pp. 120–123.

September of 1918 their borrowings from the System exceeded their contributions to its resources.

MEMBER BANK BORROWINGS FROM THE RESERVE BANKS
(000,000 omitted)

Middle of Month	1917		1918	
	Bills Discounted	*Federal Reserve Bank Stock and deposits*	*Bills Discounted*	*Federal Reserve Bank Stock and deposits*
Jan.	$ 24	$ 736	$ 603	$1570
Feb.	20	744	502	1483
Mar.	17	782	518	1522
Apr.	22	798	713	1570
May	45	805	842	1536
June	203	938	1016	1631
July	140	1077	1160	1515
Aug.	143	1189	1285	1541
Sept.	167	1199	1613	1549
Oct.	293	1326	1689	1586
Nov.	488	1547	1797	1530
Dec.	713	1618	1850	1648

Means used to Facilitate Rediscounting. To facilitate the discounting of war paper the Board, in a circular letter dated May 22, 1917, authorized the Reserve Banks to discount non-member bank paper or the paper of their customers when indorsed by a member bank and when secured by government obligations. Prior to this time the Reserve Banks could rediscount non-member paper if eligible and if indorsed by a member bank provided that the member bank had not contemplated rediscounting this paper when it originally made the loan. The new ruling allowed the Reserve Banks to discount freely not only paper indorsed by non-members but notes actually made by them and offered by the member bank with its own indorsement, provided of course that such notes were collateralled with government obligations.[139]

Another method used to facilitate the discounting of war paper was the alteration of the National Banking Act (which limited the loans to any one interest secured by stocks, bonds and real estate mortgages, to 10% of the lending bank's paid-up and un-

[139] For a discussion of this see *Letters to College Classes in Economics and Banking*. published by the Federal Reserve Bank of Richmond, p. 104.

By reason of the low Bank rates, member banks were enabled to borrow from Reserve Banks and loan to non-members at a profit. *Federal Reserve Bulletin*, 1918, p. 1169.

impaired capital and surplus) in order to permit national banks to loan an additional 10% to any one interest on the notes and bonds of the United States Government issued since April 24, 1917.[140] On March 3, 1919, the Reserve Act was amended to allow the Regional Banks similarly to discount the notes of member banks bearing the signature or indorsement of any one borrower up to 20% of the member bank's capital and surplus provided that the amount in excess of 10% was secured by government obligations.

Not only were relaxations made in respect to the discounting of war paper but the requirements governing the eligibility of commercial paper were considerably relaxed. As the war progressed banks found an increasing amount of their paper eligible.[141] Paper was taken which was not strictly liquid and which did not represent current transactions. The Reserve Banks, like the central banks in Europe, were forced to depart far from the established principles of central bank practice in their discount operations.[142]

Open-Market Operations of the Reserve Banks during the War Period. In the accompanying table are given the open-market operations of the Reserve Banks:[143]

[140] On Sept. 24, 1918.

[141] Anderson and Hepburn, *The Gold and Rediscount Policy of the Federal Reserve Banks,* p. 15.

The Board wisely resisted efforts to amend the law to make long-term paper eligible. (*Fourth Annual Report of the Rederal Reserve Board.* p. 19).

[142] "The war thrust upon it enormous business, of a kind not contemplated when the act was passed—a business based not upon self-liquidating commercial paper but upon Government bonds, and at rates abnormally low considering the demand.

This enforced departure from sound banking principles necessarily led to enormous expansions of credit—or inflation, if you prefer that term; and the problem has been ever since how to get away from it. Of course it is entirely contrary to the principles on which the Federal Reserve Act was founded to make loans on bonds, even if Government bonds, at lower rates than on commercial paper, yet in some districts we are still doing it. And indirectly we are issuing currency based upon these bonds, though that was one of the very things the Federal Reserve Act was reputed to put a stop to." Platt, *Federal Reserve System Still on Trial,* pp. 319–320.

[143] Source:

Fourth Annual Report of Federal Reserve Board, p. 130.

Fifth Annual Report of Federal Reserve Bank, pp. 189–190.

During 1917 purchases of certificates of indebtedness were not included in the government obligations purchased by the Reserve Banks. On December 31, 1917, the Reserve Banks held $43,050,500 of certificates of indebtedness. (*Fourth Annual Report of Federal Reserve Board,* p. 73).

OPEN MARKET OPERATIONS OF THE RESERVE BANKS

	Bankers' Acceptances	*Trade Acceptances* (000 omitted)	*Government Obligations*	*Municipal Warrants*
1917–January	$ 20,376	$ 241	$2,431	$7,731
February	68,994	1,646	601	5,853
March	27,476	677	10,523	1,031
April	41,019	293	4,090	280
May	79,355	3,189	52	119
June	132,482	2,748	1,998	5
July	63,629	3,235	19,737	100
August	67,511	4,612	3,825	135
September	104,163	4,884	20,831	22
October	85,443	1,451	1,559	1,187
November	181,872	4,346	1,547	164
December	174,444	3,625	21,406	196
1918–January	128,117	2,502	525,880	1,256
February	145,682	2,593	532,939	137
March	134,447	4,549	1,099,055	95
April	104,523	3,993	324,566	58
May	108,749	7,164	200,257	16
June	84,955	4,624	428,848	10
July	117,992	5,582	22,939	67
August	155,016	7,780	30,506	50
September	178,887	4,245	85,689	9
October	249,326	7,379	632,350	.3
November	190,940	4,758	219,403	11
December	149,867	5,866	1,747,917	. . .

A study of this table shows:

1) a tremendous increase in purchases of bankers' and trade acceptances.

2) a great increase, especially through 1918, in purchases of United States securities.

3) a great decline in purchases of municipal warrants. In December 1918, none were purchased.

The open-market operations of the Reserve Banks were, relative to the whole of their investment operations, much less important in 1917 and in 1918 than in 1915 and in 1916. In 1915, their open-market operations amounted to 48% of their total investment operations; in 1916, to 72%; in 1917, to 12%; and in 1918, to 16%.

As before America's entrance into the war so during 1917 and 1918 the System encouraged the use of trade and bankers' acceptances by granting them preferential rates. In both years the Reserve Banks of Boston, New York, Philadelphia and Cleveland purchased over 60% of the bankers' bills taken by the System. In 1917, the New York Bank alone purchased 43%; and in 1918, 53%.[144] The majority of the acceptances purchased matured from sixty-one to ninety days. The quality of the acceptance had not improved, if anything it had deteriorated. The majority were of course drawn against goods intended for use in the war, many were drawn by acceptance syndicates, were purchased by the Reserve Banks to assist in the financing of the war, and were frequently renewed. Though every effort was made to build up a discount market, none developed in the sense that it could exist independently of the Reserve System as the London market before the war might exist independently of the presence of the Bank of England. The purchases of acceptances by the Reserve Banks were still very large compared with the total amount outstanding.

The growth of the earning assets of the Reserve Banks was reflected in an increase of their deposits and note liabilities and in a decline of their reserves. Federal Reserve notes increased during the war period from 377 to 2558 millions of dollars and member bank deposits from 758 to 1546 millions. At the time of the armistice the ratio of total cash reserves to net deposits and Federal Reserve note liability combined amounted to 50% while at the time of America's entrance into the war this had amounted to 89%.

Inter-District Purchases of Acceptances and Rediscounting. Through 1917 the Federal Reserve Banks of Boston and New York (the only ones so doing) sold to the other Reserve Banks bankers' acceptances amounting to $64,914,497 and $103,497,023 respectively.[145] Located in great exporting centers it is natural that these two Banks should have been large purchasers of acceptances which they then disseminated throughout the System. In 1918, the sales of bills among the Reserve Banks amounted to $336,590,598, of which amount the New York Bank sold $180,900,721; the Boston Bank, $75,041,256; and the Richmond Bank, $37,116,421.[146] Inter-district redis-

[144] *Fifth Annual Report of the Federal Reserve Board,* pp. 172–174.
[145] *Fourth Annual Report of the Federal Reserve Board,* p. 121.
[146] *Fifth Annual Report of the Federal Reserve Board,* pp. 180–181.

counting occurred for the first time on the 11th of December, 1917, when the Boston Bank rediscounted $20,000,000 of notes secured by Liberty bonds with other Reserve Banks.[147] Through 1918, 324,049,165 dollars worth of commercial paper was discounted between the districts.[148] Inter-district rediscounting and the sales of acceptances took place through this period to bolster up the reserves of certain of the Banks and to act as an offsetting item to the large Government transfers of funds from one district to another. The principle borrowing banks were New York, Boston, Dallas, Atlanta, Richmond and Philadelphia. The Cleveland and San Francisco Banks borrowed not at all, and the Chicago, St. Louis, Minneapolis and Kansas City Banks but little.[149]

Measures Taken by the Government to Combat Inflation. So far this chapter has dwelt with the measures adopted by the Government to facilitate the "manufacture" of credit and the absorption of the war loans. These included the lowering of the reserves of member banks and the reserves held against Federal Reserve notes, the impounding of gold, the relaxing of the requirements on eligible paper, allowing non-members to have access to the discount facilities of the Reserve System, establishing preferential rates on paper secured by government obligations, the purchasing of acceptances by the Reserve Banks, etc. The inflationary effect of these measures was so great that the government felt obliged to take counteractive steps. It therefore undertook:

1) The fixing of prices.
2) The rationing of credit on the New York Stock Exchange.
3) The rationing of investment credit.
4) Encouraging commercial banks to withhold credit from non-essential industries.

Price Fixing.[150] The fixing of prices in America began about

147 *Fourth Annual Report of the Federal Reserve Board,* p. 220.

148 *Fifth Annual Report of the Federal Reserve Board,* p. 181.

149 Inter-district rediscounting was facilitated by the daily gold settlement plan put into effect on July 1, 1918. (*Federal Reserve Bulletin*, 1918, p. 591). For an account of inter-district rediscounting, see *Inter-Federal Reserve Bank Rediscounting,* by James G. Smith.

150 In the preparation of this section the following were extensively used:
Taussig, *Price-Fixing as seen by a Price Fixer.*
Hollander, *War Borrowing,* pp. 170–176.
Kemper Simpson, *Price-Fixing and the Theory of Profit.*
Paul Willard Garrett, *American Control over War Prices.*

the middle of 1917 and came to an end almost immediately after the armistice.[151] The most important agencies for the fixing of prices were the Food Administration, the Fuel Administration and the Price-Fixing Committee of the War Industries Board. The first two came into existence as a result of the passage of the Lever Act, August 10, 1917; the Price-Fixing Committee of the War Industries Board was created by the President on March 14, 1918. Although these were the most important price fixing agencies, prices were occasionally fixed by other authorities. Congress fixed the minimum price of wheat. The President fixed the first prices for bituminous and anthracite coal. Individual prices were fixed from time to time by the purchasing departments of the Army, the Navy, and the Emergency Fleet Corporation, by the Sugar Equalization Board, by the Federal Trade Commission and by the International Nitrate Executive Committee. It was the existence of such a large number of price-fixing agencies, whose policies were not always harmonious, that finally led to a centralization of much of their activities in the Price-Fixing Committee of the War Industries Board.

In fixing prices the governmental agencies followed a frankly opportunistic policy. In the main, prices were fixed at a point to insure sufficient production as determined by the modal producers. On other occasions prices were fixed to correspond with the price prevalent in the market or to correspond with an average price over a period of years. In addition to insuring adequate production other ends were sought by price-fixing:

1) It was recognized that the Government's demand for certain commodities would be on a scale to absorb a very large proportion of their current production. In other words the demand for such commodities would be almost totally inelastic. Unless the prices of such commodities were fixed, a tendency to a runaway market

Haney, *Price-Fixing in the United States during the War.*
Litman, *Prices and Price Control in Great Britain and the United States during the World War.*

[151] An effort was made early in 1919 by the so-called Industrial Board formed under the auspices of the Department of Commerce to revive price-fixing, this time not to check profiteering but to prevent cut-throat competition and a too rapid decline in prices. The Railroad Administration was unwilling to cooperate and on May 9 it was unofficially announced in Washington that all such plans had been abandoned. See *The Journal of Political Economy,* June 1919, p. 505; *The Financial Review,* 1920, p. 16; and the *Federal Reserve Bulletin,* 1919, p. 344.

would develop and the Government would fall a prey to soaring advances.

2) The prices of goods essential to public consumption were fixed in order to prevent social unrest. The prices of luxuries were not fixed.

In all 573 commodities,[152] essential for the well-being of the public or for the furtherance of the war, came under control. The measures taken to enforce the prices fixed ranged from appeals to patriotism to the commandeering of goods. The Fuel Administration had direct power under the Lever Act to fix prices. The Food Administration had a direct means of control through its licensing powers. The other agencies were at liberty to recommend to the President that plants and goods be commandeered and to the Railroad Administration that transportation priorities be granted to persons obeying the dictates of the price-fixing bodies.

In the chart on p. 304 the fluctuations in the prices of the 573 controlled articles are compared with fluctuations in the prices of 793 uncontrolled.[153] From the time that price fixing began, the prices of the controlled articles declined, reaching a low point of 189 in June of 1918. Thereafter, their index number tended upwards. The index number of uncontrolled commodities rose without a break from 146 in April 1917, to 200 in November 1918.

No policy could be more inconsistent than for the Government to inflate on the one hand and to fix prices on the other. While the Treasury and the Federal Reserve Banks were inaugurating measures which directly promoted inflation, producers were being told what prices they might charge the Government and in many cases what prices they might charge the public.[154] As Professor Cassel has indicated:[155]

> It is important to root out the popular fallacy that a general rise of prices can be prevented by legislation enacting maximum prices and inflicting punishment on speculators, while the government is incessantly flooding the country with fresh money and the bank-rate is kept too low.

[152] Garrett, *American Control over War Prices*, p. 24.
[153] Source of chart, *ibid.*, p. 30.
[154] Mitchell, *Prices and Reconstruction*, p. 142.
[155] Cassell, *Some Leading Propositions for an International Discussion of the World's Monetary Problem*, p. 264.

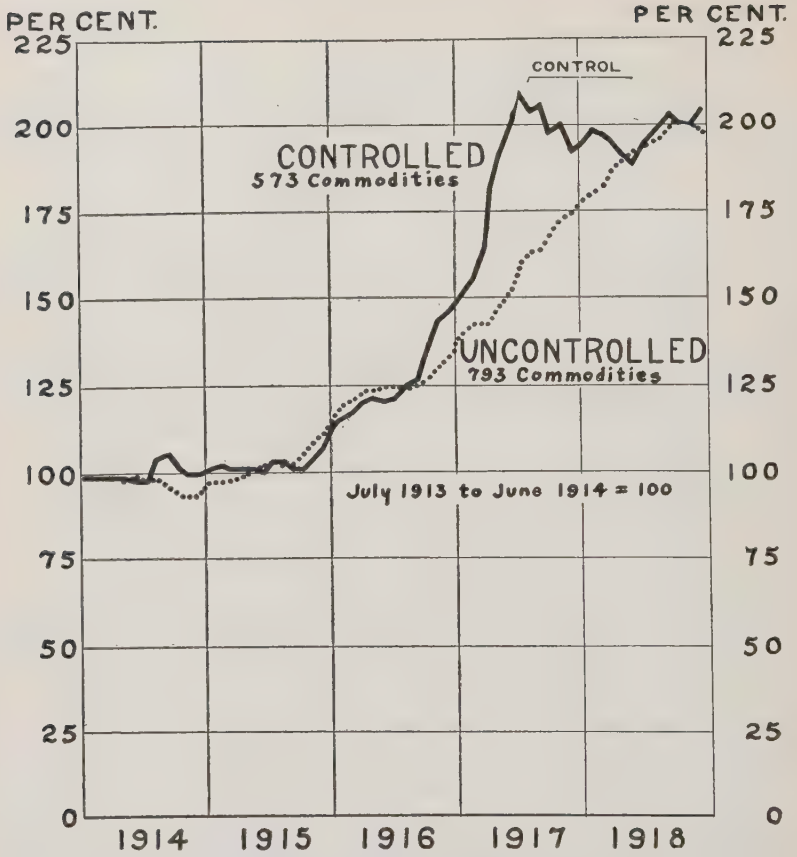


Chart XIX: Fluctuations in the Index Numbers of the Prices of 573 Controlled Commodities Compared with Fluctuations in the Prices of 793 Uncontrolled Commodities.

To be successful a policy of price fixing must be accompanied by a refusal to countenance inflation, and by strict control over the production of non-essentials in order to prevent a stimulation of their production through the fixing of the prices of essential products.

The Rationing of Credit on the New York Stock Exchange. Control over the amount of money loaned on the New York Stock Exchange began before the close of the first Liberty Loan campaign and continued until the latter part of January 1919.[156]

[156] The most valuable sources in preparing this section were:
Magee, *Call Rates and the Federal Reserve Board.*

Up until August of 1918, control was exercised to insure a sufficiency of funds in order to prevent interest rates from being pushed up to panic figures; after that time the controlling agency found that its task had become one of preventing the stock market from absorbing too large a share of the funds of the country and from hindering in this way the flotation of government securities.

Before the termination of the first Liberty Loan campaign the interior banks began to withdraw funds employed on the Stock Exchange to invest in government obligations and in commercial paper eligible for rediscount, so that in case of necessity they might have no difficulty in obtaining funds from the Reserve Banks.[157] The officials of the Stock Exchange and bankers in New York were fearful that this would force interest rates to very high figures, depress the prices of Liberty bonds, and render more difficult the task of the Government in selling its obligations.[158] Thereupon the banks represented on the New York Liberty Loan Committee for several months made up a fund to loan on the Exchange which would replace the withdrawals. By September 1917, it was found that the plan worked injustice and hardship to the banks which had assumed this responsibility. On the 5th of the month a subcommittee of the Liberty Loan Committee was appointed, composed of Governor Strong of the New York Federal Reserve Bank as chairman and the Presidents of eight of the largest banks in New York, to devise more equitable means for providing the funds required. It was found that banks in New York were loaning some $450,000,000 on the Stock Exchange.[159] An arrangement was finally effected whereby this amount was reapportioned among sixty-five banks in New York on the basis of their assets, and an additional fund of $200,000,000 was apportioned in the same manner to be used when necessity demanded it.[160] The efforts of the Money Committee to prevent call loan rates from rising were successful, for throughout this period they did not rise above 6%.

In August of 1918, with the end of the war in sight, a tendency

Hearing before the Joint Commission of Agricultural Inquiry, Pt. 13, pp. 666–682.

Fifth Annual Report of the Federal Reserve Board, pp. 365–367.

The Financial Review, 1918, p. 49; 1919, p. XVIII and XIX; 1920, p. 8.

[157] *Hearing before the Joint Commission of Agricultural Inquiry,* pt. 13, p. 665.

[158] *Ibid.,* p. 666.

[159] *Ibid.*

[160] *Fifth Annual Report of the Federal Reserve Board,* p. 366.

developed on the part of the public to speculate heavily in securities. The Money Committee was forced to change its policy from one of seeing that the Stock Exchange had sufficient funds to one of controlling this speculative outburst. The Committee felt that such speculation would interfere as seriously with the financial requirements of the Government in diverting funds to the Exchange as had the previous withdrawals in taking money from it. On September 5, 1918, Governor Strong addressed a letter to the President of the New York Stock Exchange stating it as the opinion of the Subcommittee that any attempt to increase the collateral loan account should be checked and requesting that the Stock Exchange secure from each of its members the amount of their time and call loans.[161] On October 24 another letter was sent advising the Exchange that banks would be requested after Monday, November 4, to increase their margins on mixed collateral from 20 to 30% and on industrials from 25 to 37½%.[162] This action was necessitated, the Subcommittee declared, by considerable increases in the loan account. This arrangement was withdrawn on December 5, because the Stock Exchange felt that it worked considerable hardship to the smaller houses. Instead, assurance was secured from the Exchange that every means would be taken to prevent any considerable increase in the total of the loan accounts of its members.[163]

The Subcommittee terminated its activities in the latter part of January 1919, upon representations of officials of the Stock Exchange that there was nothing to indicate the probability of a speculative movement which would absorb large amounts of money.[164] The Treasury Department reluctantly agreed to allow the Subcommittee to be disbanded.[165] With the control of the Money Committee at an end, the ability of the Reserve Banks to check stock market speculation was virtually destroyed, for the war finance policies of the Treasury Department prevented them from raising their rates. In view of the fact that the Reserve Banks could not institute a policy of rate control, the better plan, as Governor Strong admits,[166] would have been to have con-

[161] *Hearing before the Joint Commission of Agricultural Inquiry*, Part 13, pp. 675–676.

[162] *Ibid.*, p. 677.

[163] *Fifth Annual Report of the Federal Reserve Board*, p. 366.

[164] *Hearing before the Joint Commission of Agricultural Inquiry*, Part 13, p. 681.

[165] *Ibid.*, pp. 679–680.

[166] *Ibid.*, p. 646.

tinued the activities of the Money Committee, assuming that public opinion would not have become too ominous, until such a time as the Reserve Banks were free to raise their rates, some six months after the flotation of the Victory Loan.

The officials of the Stock Exchange were poor prophets. In February the prices of securities began to move upwards. By March, street loans had increased to a billion dollars and by November, to a billion and a half. Seldom has the Stock Exchange witnessed such speculation as swept it during the last three quarters of 1919.

The Rationing of Investment Credits. In his annual report to Congress dated December 3, 1917, the Secretary of the Treasury emphasized the importance of avoiding unnecessary capital expenditures in private and public undertakings.[167] To engage upon such enterprises, he declared, would divert labor and materials from military employment. Though the Secretary had not been clothed with specific authority, a number of corporation executives, bankers and municipal officials, inspired by the desire not to do anything which might retard war activities, began to submit to the Secretary plans of new enterprises and new capital flotations to find out whether or not in his opinion they were compatible with the national interest. These submissions increased to such an extent that the Secretary in a letter addressed to the Reserve Board on January 11, 1918, requested that it assume the task, as another patriotic service, of passing upon such proposals. At its meeting on the 14th, the Board voted to do so and chose Paul M. Warburg, Frederic A. Delano and Charles S. Hamlin from among its members, to undertake the work.[168] They were assisted by a voluntary committee of six, including men who had been engaged in investment and commercial banking and in the practice of law. The Capital Issues Committee of the Federal Reserve Board appointed with the advice of the Reserve Agent and Governor in each Reserve District an auxiliary committee including the Reserve Agent as Chairman

[167] The sources of this section are:

1) Report of the Capital Issues Committee of the Federal Reserve Board, *Federal Reserve Bulletin,* 1918, pp. 704–708.

2) *Federal Reserve Bulletin,* 1918, pp. 156–157 and 168–169.

3) *Fifth Annual Report of the Federal Reserve Board,* pp. 64–66, and 367–369.

[168] This committee acted similarly to the Capital Issues Committee in London which relied upon the voluntary coöperation of banks, bankers and business men for the enforcement of their decrees. The English Committee was organized in January, 1915, and dissolved in December, 1919.

and the Governor as vice-Chairman. In beginning its work on February 1, 1918, the Capital Issues Committee of the Board announced that it would pass upon industrial and public utility issues of not less than $500,000 and upon municipal issues of $250,000 and over. Subsequently the minimum for both classes was reduced to $100,000. The tests applied to the proposed security issues were, whether the offer was timely with respect to the financial operations of the Government, and if timely whether the objects for which the funds were to be raised were compatible with the public interest. During its life, the Board's Committee held forty-six meetings and passed upon some three hundred sixty-one offerings amounting to $478,458,386 of which $65,691,665 or about 14% were disapproved.[169] Of the amount approved, however, $258,664,496 represented refunding operations, so that the aggregate new securities amounted to but $154,102,224. Though the Capital Issues Committee of the Board was without legal authority, it was able to effect the stoppage of the flotation of securities by reason of the hearty coöperation given it by the American Bankers Association, the Investment Bankers Association, the New York, Chicago, and Philadelphia Stock Exchanges and by various Chambers of Commerce. These organizations had all passed resolutions to the effect that their members would not place, or deal in, any securities upon which the Capital Issues Committee had not passed favorably.[170]

By Title II of the War Finance Corporation Act, approved April 5, 1918,[171] provision was made for the appointment of a Capital Issues Committee by the President which was to supersede the voluntary committee of the Federal Reserve Board. The new committee was to consist of seven members, at least three of whom were to be members of the Board. Under rules and regulations prescribed by it this committee was to pass upon any securities issued by a person, firm, corporation or association, the face value of which was in excess of $100,000.[172] The committee was not to pass upon:—

1) Ordinary commercial borrowing.

2) The refunding of an indebtedness existing at the time of the passage of the act.

[169] *Fifth Annual Report of the Federal Reserve Board*, p. 65.

[170] Warburg, *Capital Issues for State and Municipal Debts and their Relation to War Financing*, p. 81.

[171] For text of act, see *Federal Reserve Bulletin*, 1918, pp. 301–306.

[172] Shares without par value were valued at $100 each.

3) The resale of any securities, the sale of which the committee had determined to be compatible with the public interest.
4) Securities issued by railroads under the control of the President of the United States.
5) Bonds issued by the War Finance Corporation.

On April 29, the President sent to the Senate the names of the seven nominees.[173] The new Capital Issues Committee followed the plan of organization inaugurated by the original committee.[174] While the new committee was given the power to investigate proposed sales of securities and to determine whether such were compatible with the public interest, no penalties were provided for failure to submit proposed security issues to the committee. In carrying on its work it had to rely upon the patriotism of persons to submit new issues and it was powerless to deal with the thoughtless or unscrupulous person who failed to have his security issue approved.[175] On December 26, the committee announced that it would suspend its activities on the 31st and would remain inactive until formally dissolved by the President or unless the sale of new securities competed unduly with government financing.[176] On the 30th of August, 1919, the committee was formally dissolved.[177]

From the date of its organization on May 17, 1918, to the close of its active operations, on December 31, 1918, the committee received and passed upon 3,309 applications involving new securities to an aggregate value of $3,777,313,000. The total amount disapproved was $917,133,000, or 24%.[178]

The two Capital Issues Committees did excellent work in preventing, through controlling the issuance of securities, unessential undertakings from securing labor and materials sorely needed by the Government. Had the Government exercised complete control over labor and industry, had labor and industry been commandeered, the Capital Issues Committees would have been unnecessary. This rather than the rationing of investment credits would have been the more effective way of preventing non-

173 The new committee took office on May 17, 1918, and the Board's committee disbanded them. *The Commercial and Financial Chronicle*, May 25, 1918, p. 2191.

174 For its rules and regulations, see *Federal Reserve Bulletin*, 1918, pp. 627–633.

175 *Finance Report*, 1918, p. 61.

176 *Federal Reserve Bulletin*, 1919, p. 18.

177 *Ibid.*, p. 1053.

178 *Finance Report*, 1919, p. 107.

essential industries from securing goods. To the extent that security issues were prevented, the investment market was relieved of the necessity of absorbing such issues and government issues met with less competition. The life of the Capital Issues Committee like that of the Money Committee should have been prolonged. In the first place, government financing did not terminate with the armistice, but continued right through 1919. If the Capital Issues Committee was needed in 1918 it was certainly needed in 1919. Secondly, if the control had continued the people of the country might have been saved millions by preventing the issuance of even a fraction of the worthless securities which flooded the nation in 1919.[179]

The Control of Commercial Credits. Through its Capital Issues Committees, the Government endeavored to ration investment credit requirements. Commercial credit extensions were not controlled by any such agency. The Federal Reserve Board from time to time admonished member banks not to grant loans for non-productive or non-distributive purposes. For instance, in its *Fourth Annual Report* [180] the Board advised banks to extend their funds freely to those engaged in productive enterprises and to curtail unnecessary credits. The products of the fields, the forests, the mines and the manufacturing establishments of the country are not, claimed the Board, in the nature of luxuries. In April 1918, the Board complained that the curtailment of commercial credits had not been accomplished as effectively as the curtailment of investment credits.[181] Its purpose, the Board stated, was not to suggest specific ways in which credit should be conserved; each banker would have to determine that problem for himself. Loans for the purchasing or carrying of property, and for additions or improvements to property not essential for production or distribution were to be classed as non-essential. The Board went on to point out that the three main groups of borrowers for productive or distributive purposes were farmers, manufacturers and merchants, but that not all loans extended to them necessarily originated for essential purposes. Loans should not be made to farmers for acquiring additional property unless the production area was to be increased thereby, or for constructing buildings unless absolutely required. Manufacturers should be encouraged to reduce their inventories, to pay their

[179] See *Federal Reserve Bulletin*, 1919, p. 18.
[180] P. 9.
[181] *Federal Reserve Bulletin*, 1918, pp. 261–262.

debts promptly, and to standardize their products. Non-essential industries should adapt at least a part of their plants to the manufacture of articles needed by the Government. Merchants should also be encouraged to reduce their inventory, to substitute plainer articles for objects of luxury and to avoid introducing new styles. Each loan should be viewed in its relationship to the health and safety of the population. On July 8, Governor Harding transmitted a letter [182] to each of the Reserve Banks in which he declared that effective steps toward the curtailment of unnecessary credits had been taken by only a few banks and requested the Regional Banks to direct the attention of all banks in their district to the need of curtailing non-essential loans. He suggested that the Reserve Banks organize in each district local groups comprising the leading bankers and business men and discuss with them the ways and means of curtailing unnecessary credits and of diverting industries producing luxuries and extravagances into essential lines of production. As a result the *Bulletin* announced in its September issue [183] that the curtailment of non-essential credits was being noted in various Reserve Districts. Not only through the war period but also through the great post-armistice "boom" the Board constantly exhorted banks to curtail speculative and non-essential loans so that additional funds might be released for productive or distributive purposes.

The attempts of the Reserve Board and of the Reserve Banks to curtail non-essential credits doubtless did have some effect in the large cities [184] but on the whole it was unsuccessful in curtailing the production of luxuries or in increasing the production of essential commodities for several reasons:

1) The type of banking system existing in America, composed of 30,000 independent competitive banks, renders any effective control over commercial credits most difficult. Such control would be much simpler in Canada with seventeen banks or in England with five large institutions. In America bankers would be induced to loan to non-essentials for fear of losing valuable customers to a competing bank.

2) This method of controlling the production of non-essentials was predicated upon the belief that all industries must rely upon

[182] See *Federal Reserve Bulletin*, 1918, pp. 685–687.

[183] P. 802.

[184] Anderson, *Effects of the War on Money, Credit and Banking in France and the United States*, p. 191.

banks for accommodation. Such was not the case during the war period. There were many non-essential industries whose receipts consisted so largely of cash, owing to prosperity and to the habit of paying cash for goods, that they could handle the financing of their own operations without resorting to banks.[185]

3) Bankers were uncertain of the meaning of the term "non-essential." Each was inclined to consider the needs of his own community essential.

The rationing of credit is by no means as direct a method of controlling production as is general control over the basic raw materials. Under the latter method essential industries could be furnished with necessary labor and materials and the inability of the less essential industries to secure supplies would force banks in the interests of safety to curtail loans to them.[186]

Conclusions. Many of the mistakes committed by the Treasury Department in the financing of the war resulted from stressing too greatly the part played by money and credit. The fact that men and goods are the sinews of war, that armies must be equipped from the surplus of current production over consumption was not fully appreciated. In our highly developed and complex credit economy, we believed that dollars would win the war, that every one should direct a dollar barrage at the Kaiser's hosts. The words of Napoleon were broadcasted, "Money, more money and still more money are the three prime necessities of war." There was a general failure to distinguish between money and credit as ends in themselves and as means of securing military equipment. Greater concern was apparently shown over means of promoting credit inflation than over means of speeding up production, of diverting non-essential industries to the production of war supplies, and of curtailing consumption. The methods taken by the Government to combat inflation could not succeed so long as money was pumped into circulation and the Bank rates kept inordinately low. The policies which were followed, of course, were heartily supported by the classes who profit by inflation, while a program of war finance which would have avoided inflation would have aroused much condemnation.

At the outbreak of the war in order to avoid inflation the Government should have assumed control of the industrial life

[185] *Report of the Committee on War Finance of the American Economic Association*, p. 108.

[186] *Federal Reserve Bulletin*, 1918, p. 923.

of the nation.[187] Non-essential plants should have been closed or diverted to war purposes. The nation's man power should have been drafted either into the military or industrial forces. The consumption of necessities should have been rationed. The conscription of industries and labor should have been followed by as rigorous a tax policy as economically and politically feasible, bearing heavier on unearned than on earned incomes. Every effort should have been made to sell bonds to the ultimate investors and they should have been encouraged to purchase them from savings and not from funds borrowed from banks. To induce this saving the bonds should have been floated at market rates of interest which would have allowed the Reserve Banks to have raised their rates equal to those prevailing in the market. To avoid post-war clashes between tax-payer and bond-holder the bonds should have been made taxable. Had these policies been followed there would have been less inflation. The war's costs would have been paid for by those better able to bear the burden than the persons living on fixed incomes upon whom inflation bore heaviest.

As it was, the Reserve Banks were converted into engines of inflation. Their portfolios became clogged with war paper. So long as this condition lasted and so long as the Government was a heavy borrower in the money market, the System could exercise no control over credit. The post-war problem of the Reserve Banks, then, became one of retracing the steps taken during the war.

[187] Mr. A. H. Gibson, writing in a book (pp. 396–397) entitled *British Finance During and After the War, 1914–1921* edited by A. W. Kirkaldy, expresses the belief that England's war expenditures could have been reduced by 50% had the British Government conscripted the factors of industry.

CHAPTER VII

POST-WAR INFLATION

The Business Recession Following the Armistice. The feeling was general in business circles that the termination of hostilities would be followed by a decline in commodity prices and by a business recession.[1] Had it not been said that the war was responsible for the rising price level and for the period of prosperity and therefore would it not follow that the armistice must usher in a period of depression?[2] The *Federal Reserve Bulletin*, itself, in its issue for January 1, 1919,[3] predicted that there would be a general reduction in prices, probably not to their pre-war level, but to something approximating it. The views of six leading American bankers on the future course of business were presented in the January 1919, issue of *Trust Companies*. It was the general opinion of these men that interest rates would continue high, that liquidation would ensue and that prices would fall as war contracts were cancelled. During the first few months of 1919 it seemed that these predictions were to be justified. The wholesale price index fell from 203 in November 1918, to 193 in February 1919.[4] The movement of prices by groups of commodities is given in the following table:[5]

[1] See Friday, *Profits, Wages, and Prices*, p. 156.
The Review of Economic Statistics, December 1919, p. 9.
Testimony of Governor Strong before the Joint Commission of Agricultural Inquiry, Part 13, p. 682.
In the Report of the Joint Commission of Agricultural Inquiry, *Credit*, Part II, p. 41, the statement appears: "It became apparent in August, 1918, that the war would end with an allied victory. It was generally thought that the return of 4,000,000 men from the Army to industry, the conversion of war plants to purposes of peace, the relocation of employees, and the general let-down from maximum war production and reduction of export trade would bring about a condition under which deflation of prices would take place automatically."

[2] See Cassel, *Money and Foreign Exchange after 1914*, p. 187.

[3] P. 9.

[4] *Monthly Labor Review*, July 1922, p. 61.

[5] *Ibid.*

	November, 1918	*February, 1919*
Farm Products	225	216
Foods	204	194
Cloths and Clothing	241	210
Fuel and Lighting	179	178
Metals and Metal Products	191	170
Building Materials	177	173
Chemicals and Drugs	209	169
House Furnishings	164	165

The decline in these indices induced the Board to declare that business recession was the primary economic phenomenon of the moment in banking as well as in industry and that the process of liquidation had begun.[6] Production as measured by twenty-two basic commodities declined from 106 in November to 100 in February.[7] As war industries were discontinued a considerable amount of unemployment resulted. In December 1918, the percentage of unemployed reported by the official figures of Massachusetts amounted to 9.8%, which increased to 13.4% in March.[8] Speculation on the New York Stock Exchange likewise declined. Transactions in stocks in October amounted to over 20,000,000 shares and during February to 12,000,000.[9] The average price of Liberty Bonds fell during the same period from 97.71 to 94.86;[10] of forty domestic bonds from 80.89 to 78.10, and of twenty-five railway and twenty-five industrial stocks from 76.06 to 72.93.[11] Bank clearings throughout the United States declined from $29,000,000,000 to $26,000,000,000.[12] The loans, discounts, investments and deposits of the reporting member banks declined slightly. The amount of Federal Reserve notes in circulation declined, as did the per capita amount of money outside the United States Treasury and the Federal Reserve Banks. Exports of commodities fell off slightly. These facts will suffice to illustrate the course of business from November 1918, to February 1919. The trend was downwards, and business men felt sure that it would continue so for some time.

The Course of Business through 1919. The year 1919

[6] *Federal Reserve Bulletin*, 1919, p. 103.

[7] *Ibid.*, 1922, p. 1414.

[8] *The Review of Economic Statistics*, December 1919, p. 25.

[9] *Standard Daily Trade Service*, April 20, 1923, p. 17.

[10] *Ibid.*

[11] Courtesy of the Reports Department, Federal Reserve Bank of New York.

[12] *Standard Daily Trade Service*, April 20, 1923, p. 17.

belied these early indications and was in all respects a distinct surprise. The downward movement of prices did not continue. The index number of wholesale prices in March stood at 196, or three points above the index for February. From then on prices advanced steadily with slight declines in September and October until they touched 247 in May 1920.[13] The greatest advances occurred in cloths and clothing, and in building materials, which reached 328 and 293 respectively.

Prices on the Stock Exchange touched bottom on the 14th of February.[14] From then on, with but temporary recessions in March, June, and July, they rose steadily until the 12th of November.[15] Transactions on the Stock Exchange which amounted to 21,000,000 shares during March increased to 37,000,000 in October.[16] Street loans increased from $773,000,000 on February 21 to $1,518,000,000 on the 7th of November.[17] The average price of fifty stocks advanced from 72.93 in February 1919, to 94.87 in October.[18] The widespread unemployment which the months of January and February seemed to portend did not develop. Labor was greatly in demand. The dollar value of our export trade increased enormously. In 1919 America's "favorable" balance of trade amounted to $1,016,000,000 and in 1920 to $2,950,000,000.[19] Even on the basis of 1913 prices, exports for 1919 were 18.6% greater and for 1920 were 7.7% greater than exports for 1913.[20] The loans and discounts of all banks, both state and national, exclusive of savings banks, rose from $21,950,000,000 in June 1919, to $27,368,000,000 in June 1920, an increase of $5,418,000,000 or ap-

[13] *Monthly Labor Review*, July 1922, p. 61.

[14] *The Financial Review*, 1920, p. xxvi.

[15] *Ibid.*, p. 1.

[16] *The Standard Daily Trade Service*, April 20, 1923, p. 17.

[17] *Hearing before the Joint Commission of Agricultural Inquiry*, Part 13, p. 647.

"Certain New York bankers have stated that they are loaning their funds on call at six and one-half per cent. . . . Not only are New York bankers putting their own funds out on call but it is reported that there has been a steady flow of funds into the call market from interior institutions." *The Review of Economic Statistics, Monthly Supplement*, August 1919, p. 9.

Funds were also sent down by Canadian banks to loan on the call market.

[18] Courtesy of the Reports Department, Federal Reserve Bank of New York.

[19] *The Standard Daily Trade Service*, April 20, 1923.

[20] *Federal Reserve Bulletin*, 1922, p. 334.

proximately 25%.[21] The loans and investments of all reporting member banks increased from $13,698,000,000 on January 3, 1919, to $16,970,000,000 on June 4, 1920. Federal Reserve notes during the same period increased from $2,648,000,000 to $3,127,000,000 the discounts of the Reserve Banks from $1,830,000,000 to $2,564,000,000. The reserve ratio declined from 48.3 to 41.0%.[22] In addition to the decline of the reserve ratio another disquieting feature of the situation lay in the failure of physical production to increase. The mean of the monthly indices of production prepared by the Federal Reserve Board, which amounted to 116% in 1917 and 101% in 1918, declined to 100% in 1919.[23]

The year 1919 was characterized by unbridled speculation and an orgy of extravagance. The restraints of the war were removed. Money was spent wildly either in personal indulgences or in land and security speculation. Despite the extravagances of certain classes the great mass of citizens were not truly prosperous. They were forced to pay higher and higher prices for the goods they consumed while their incomes lagged behind. The soaring price level was a function of an increasing volume of money and credit, the reasons for which we shall presently survey.

Financial Operations of the Government Increased the Volume of Money and Credit after the Armistice. The financial operations of the Government were mainly responsible for increases occurring in the amount of money and deposit currency after the armistice. The needs of the Government did not terminate with the conclusion of hostilities. Expenses continued to mount. Contracts had to be settled and the army and navy demobilized. Through 1919 the Government lost heavily in the operation of the railroads. Further, it made direct credit advances to the Allies amounting to over $2,000,000,000 to enable them to repatriate their troops, to close up contracts in America, and to purchase goods which they sorely needed. In addition the United States sold to the Allies $685,000,000 of army supplies on credit, expended $100,000,000 on relief work in Europe, and made $526,000,000 available to the Allies by purchasing their currencies to cover the expenditures of the American army abroad.[24] These funds the American Govern-

[21] *Report of the Joint Commission of Agricultural Inquiry, Credit*, Part II, p. 42.

[22] *Federal Reserve Bulletin.*

[23] *Ibid.*, 1922, p. 1414.

[24] Vanderlip and Williams, *The Future of Our Foreign Trade*, p. 13.

ment secured partly through taxes but mostly through floating bonds and certificates of indebtedness,[25] which were paid for from credit created in the same method as was followed during the war.

America's Unfunded Trade Balance. Through 1919 the Allies purchased 4897 millions of dollars worth of commodities in the United States most of which were either food products or manufactured goods ready for consumption.[26] While the greater part of these imports were financed through the credit advances of the American Government, a part was financed through the flotation of foreign loans in America and a part through open-book account. During 1919 foreign nations floated four hundred thirty-six millions of dollars of securities in the United States.[27] Furthermore, as the volume of exports grew, those interested in foreign trade became more enthusiastic and more willing to extend credit on open-book account to European importers as well as to importers in other nations. It has been estimated that due to this practice America's unfunded trade balance with Europe increased by 3½ billions from January 1, 1919, to September 15, 1920, and with the whole world increased from January 1, 1919, to November 1, 1920, by 2.9 billions of dollars.[28] Dr. Anderson has declared that this was the primary explanation of the credit expansion and of the high interest rates in America:

> The connection between the growth of the unfunded debt of Europe to private creditors in America and bank expansion in the United States seems clear and definite. Directly or indirectly, bank credit has carried, and is carrying, this unfunded debt. Loans made by American banks directly and simply to European importers are, no doubt, relatively small in volume. There has been a much larger volume of credits extended by American banks to European importers on the guaranty of responsible European banks, particularly British banks. A larger part of the unfunded debt is probably immediately carried by American exchange speculators. A

[25] Professor Hollander has declared that the Treasury preferred to obtain funds in this comfortable manner rather than undergo the effort of raising taxes or of resorting to funding operations. *Inflation*, p. 256.

[26] *Sixth Annual Report of the Federal Reserve Board*, p. 24.

[27] Vanderlip and Williams, *The Future of Our Foreign Trade*, p. 20.

[28] Williams, *The Foreign Trade Balance of the United States since the Armistice*, p. 31.

yet larger part is probably carried directly by American producers and exporters, who have tied up working capital in advances to Europe.[29]

The Federal Reserve Board expressed itself as opposed to the financing of our foreign trade by commercial banks in this manner when resort should really be had to the securities markets.[30] Funds were extended to Europe during 1919, then, through Government loans, open-book accounts, and the purchasing of their securities and currencies. In the latter a wild speculation ensued. Through the creation of credit in this manner Europeans were enabled to demand goods in America and as these credit extensions were not the result of saving or of economy in the United States, prices soared.

The Floating of Government Obligations in 1919. As stated above, the expenditures of the Government through 1919, were secured largely from loans. The peak of the public debt was reached on August 31, at which time the short-term debt amounted to 9247 millions, the bonded indebtedness to 16,219 millions, and the total interest-bearing debt to 26,349 millions of dollars. The Victory Loan had been floated in the Spring, from April 25 to May 10. In anticipation of this loan there had been ten issues of certificates of indebtedness amounting in the aggregate to 6158 millions of dollars. Certificates were not issued again until the 1st of August. From then until May 17, 1920, eight issues were offered, totalling 2387 millions of dollars. In addition to these issues some 6433 millions of dollars of certificates were issued through 1919 and 1920 in anticipation of income and excess profit taxes.[31] It was not until January 1920, that the Treasury was able to reduce its floating indebtedness to manageable proportions.[32]

In line with its previous policy, the Treasury floated the Victory notes at low rates of interest though not so low relative to market rates as the rates borne by the Liberty bonds. The notes were offered at two rates, 4¾% and 3¾%, the latter

[29] Anderson, *Three and a Half Billion Dollar Floating Debt of Europe to Private Creditors in America*, p. 15.

[30] *Sixth Annual Report of the Federal Reserve Board*, p. 25.

[31] *Finance Report*, 1922, pp. 470, 471 and 476–477.

It is interesting to note that the peak of the Civil War debt was reached in August 1866, a year after its close.

[32] Leffingwell, *Treasury Methods of Financing the War in Relation to Inflation*, p. 17.

being the rate borne by the notes exempt from taxes. At the time of the flotation of the Victory Loan, the yield on ten selected railroad bonds equalled 5.31%; interest rates in New York on four-to six-months commercial paper were 5.50%, and on sixty- to ninety-day paper were 5.38%; while the Canadian fives of 1921 were being sold to yield 5.1%.[33] The Treasury Department was unwilling to float the Victory notes at current rates for fear that if this were done great pressure would be exerted to refund the Liberty bonds on the basis of the new rates in order to prevent their depreciation. It might also have precipitated a liquidation of other than government securities and have depreciated the investments of saving banks, trust companies, and insurance companies. The Victory notes were floated at low rates and in the same manner as the previous loans to permit inflation in the interests of the Government and its bondholders. Some officials felt that a little inflation might be a desirable thing. They argued that it would help readjust business to a peace basis and would aid in absorbing the men discharged from the army and navy. The Reserve Banks were again compelled to coöperate and to maintain their discount rates on a commensurate level. It is rumored that the Reserve Banks entered into a gentlemen's agreement with commercial banks to carry their subscriptions and their customers' subscriptions to the Victory Loan for six months at rates of interest equal to those borne by the notes. The policy of the Reserve Banks thus continued to be subordinated to the dictates of the Treasury Department.[34] The Reserve Banks were still financing the war.

Reserve Banks Could Not Exercise Rate Control. The financial policies of the Government prevented the Reserve Banks from exercising credit control in 1919 through increases in their rates of discount. Had the Treasury floated the Victory notes

[33] *The Review of Economic Statistics*, 1920, p. 144.

[34] The Federal Reserve Board stated in its *Fifth Annual Report* (p. 87) that the discount rates of the Reserve Banks must continue to be fixed with regard to Treasury requirements until war obligations had become digested and the assets of the Reserve Banks restored to a commercial basis. Saving and economy, the Board declared, would be necessary for the absorption of the war bonds.

In this connection Professor Sprague has said:

"But even if the Federal Reserve Board had been convinced that the after-the-war financial policy of the Treasury was unwise, as to which there is no evidence one way or the other, I do not think the Board could have refused to cooperate in executing that policy, taking an independent course and making a sharp advance in discount rates." *The Discount Policy of the Federal Reserve Banks*, p. 22.

and certificates of indebtedness at market rates and had they been sold to the ultimate investor, the Reserve Banks would not have been called upon to continue the process of "manufacturing" credit. Their rates could have been advanced sufficiently high to control credit expansions. The temporary period of deflation would have been prolonged and the post-war rise in prices would have been prevented. As prices fell in America the foreign exchanges, as soon as the "pegs" had been removed, would have immediately sought their natural levels. With the adoption of a sound monetary and banking policy by the United States the Allies would have been more willing to inaugurate similar measures.[35] The saturnalia of speculation would have been prevented. It is true that the Government might have been forced to refund the Liberty bonds but the avoidance of the era of inflation would have fully compensated for the increased interest charges.[36]

[35] Professor Cassel feels that the weak discount policy adopted by the United States postponed in Europe the adoption of sound monetary policies. "The all too weak discount policy adopted by the United States has without doubt had a strong influence upon Europe. As the internal value of the dollar was so considerably reduced, the internal depreciation of the European currencies in operation at the same time did not stand out in so serious a light as it would otherwise have done. In Europe it was possible with some success to put the blame on 'the international rise in prices' and thereby detract public attention from the renewed process of inflation which was going on. Further, with a sound monetary policy in America, a policy which would have maintained unaltered the internal value of the dollar, the dollar exchange rates would have risen in Europe in a far more disquieting way than was now the case. Thus, even from that point of view, the monetary policy of the United States during 1919 contributed towards lulling Europe into a sense of security, which was inevitably followed by a particularly rude awakening." Cassel, *Money and Foreign Exchange after 1914*, p. 199.

[36] Professor Patterson has expressed himself in the following terms with regard to the Government's policy: "To place restraints upon the expansion from 1918 to 1920 would have been difficult, and, even if practical and desirable, would have called for a very high degree of wisdom and courage. It is the opinion of the writer that our government was very unwise in its decision to float its war issues of bonds and certificates of indebtedness at such low rates of interest. When so large an amount of saving was needed much higher rates would have been better. The low rates actually offered kept the general security market quiet for a considerable time, but such a policy inevitably meant a rise in prices that injured the general public, including holders of securities, far more than would the offer of higher rates on the new government issues. Nevertheless, the policy was adopted, rates were kept down and the Reserve Banks were and still are the fiscal agents of the government. So long as they are the fiscal agents the way in which they perform their other func-

The Course of the Bank Rate, January 1919, to May 1920. As had been the case during the war, there were but minor discrepancies in the rates of discount charged at the various Reserve Banks. For this reason the rates in force at the Federal Reserve Bank of New York are presented on p. 323 as typical.[37]

The most startling fact revealed by this table is that preferential rates on trade acceptances were abolished on the 30th of December 1919. Considering the quality of the trade acceptance in America and the abuses which had crept into its use, this was a very wise step. On the same date were abolished the preferential rates on war paper which had existed from America's entrance into the war. The rates on commercial and war paper remained the same until January 23, 1920, when commercial paper rates were raised above the rates prevailing on war paper and the differential was thus reëstablished. Another point of interest is that the preferential rates on commercial paper maturing within fifteen days were eliminated on November 3, 1919, and all maturities of commercial paper thereafter were discounted at the same rate. It might be remarked that to increase the liquidity of the portfolios of central reserve banks it is desirable to discount short-term commercial paper at rates lower than those prevailing on paper of longer maturities. Up to January 23, 1920, the rates on agricultural paper were slightly higher than rates on commercial paper but thereafter they were discounted at the same rates. On December 30, the rate on bankers' acceptances was advanced to equal the rate prevailing on commercial paper, but as the increases in the commercial paper rates on January 23 were greater than the increases in rates prevailing on bankers' acceptances, rates on the latter from that date on ruled at a lower figure. A strange fluctuation occurred in the rates on purchases of acceptances. On January 23 the minimum rate was raised from 4% to 5¼% and then on February 6 lowered to 5%, which is the only case through this period in

tions must be affected by this relationship." (*Expansion and Contraction*, pp. 160–161.) The Joint Commission of Agricultural Inquiry reported that had the Reserve Banks been free to raise their rates during the Spring of 1919 much of the inflation, expansion and speculation which characterized the following twelve months would have been prevented. (*Credit*, Part II, p. 44.)

[37] *Discount Rates of the Federal Reserve Banks*, pp. 6–7.

The writer discovered some slight discrepancies in the data given in the *Annual Reports of the Federal Reserve Board* and in *Discount Rates of the Federal Reserve Banks*, and was informed that the data given in the latter are correct.

Discount Rates at the Federal Reserve Bank of New York

Dates on which rates were put into effect	*Commercial Paper*		*Agricultural and Live stock Paper*	*Trade Acceptances*		*Bankers' Acceptances*	*War Paper Secured by*				*Authorized rates on acceptances purchased in open market Minimum Rate*
							Treasury notes and certificates of indebtedness		*Liberty Bonds and Victory Notes*		
	Within 15 days	16–90 days	over 90 days	Within 15 days	16–90 days	Within three months	Within 15 days	16–90 days	Within 15 days	16–90 days	
Jan. 1, 1919	4%	4¾%	5%	4%	4½%	4½% { 1–15 days—4 / 16–60 " —4¼ }	4%	4¼%	4%	4¼%	4%
Nov. 3	4¾	..	..	4½	..	4½	4¼–4½ [38]	4½	4½	4½	..
Dec. 11	..	..	..	..	..	..	4½	..	4¾	4¾	..
Dec. 30	..	..	..	4¾	4¾	4¾	4¾	4¾	..	..	..
Jan. 23, 1920	6	6	6	6	6	5	..	..	5½	5½	5¼
Feb. 6	..	..	..	..	..	..	..	..	..	..	5
Feb. 26	..	..	..	..	..	..	5	5	..	..	..
June 1	7	7	7	7	7	6	5½	5½	6	6	..

[38] Discount rate corresponds with interest rate borne by certificates of indebtedness pledged as collateral within limits shown.

which a rate was lowered. In the case of war paper it is of interest that from January 23 rates on paper secured by Treasury notes and certificates of indebtedness ruled from ½ to ¾ of 1% below rates on paper secured by Liberty bonds and Victory notes. On the surface there seems to be no justification for this difference. Some time in January the Reserve Banks seemed to have been freed of Treasury domination, for on the 23rd of the month rates on commercial paper were advanced from 4¾% (the rate borne by the Victory notes) to 6% and rates on paper collateralled by Liberty bonds and Victory notes from 4¾ to 5½%.

Throughout this period the rates established by the Regional Banks were maintained below those prevailing in the market. This was true even after the Reserve Banks had been freed from Treasury control and when their policies should have been guided by the long established principles of central bank practice.[39]

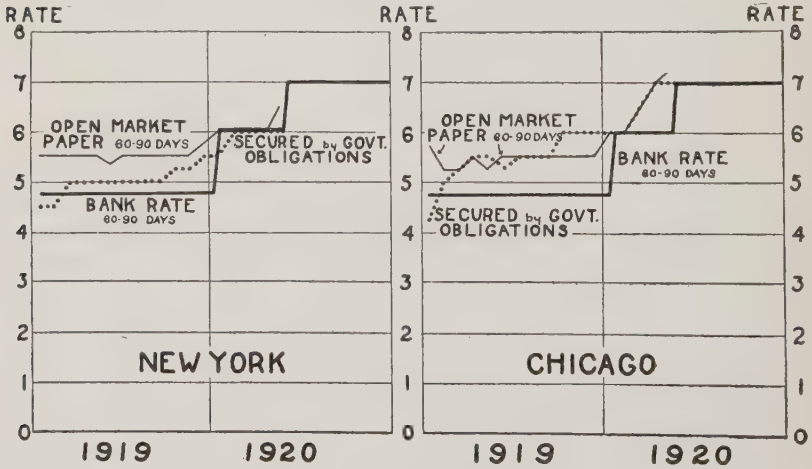


CHART XX: FLUCTUATIONS OF THE BANK RATES IN NEW YORK AND CHICAGO COMPARED WITH FLUCTUATIONS IN MARKET RATES.

Changes in Rates in England and the United States Compared. Comparing the fluctuations in rates of discount at the Bank of England and the Federal Reserve Bank of New York we find that changes in the British rate occurred some weeks before changes in the American. The British rate was raised from 5% to 6% seventy-eight days before the American rate was

[39] Source: Interest tables appearing in the *Federal Reserve Bulletin.*

raised to 6%, and was raised from 6% to 7% forty-six days before a similar rise occurred in the American rate. All of which leads one to conjecture that the example of the British in raising their rates had an effect upon rate changes in the United States. The heights attained by these two rates exhibit a striking similarity. Could it be that a working arrangement of some sort had been effected between them or was this all a mere coincidence? [40]

CHANGES IN THE BANK RATES IN ENGLAND AND IN THE UNITED STATES

Date on which rate was put into effect	*Bank of England (Minimum rate)*	*Federal Reserve Bank of New York (90-day commercial paper)*
Jan. 1, 1919	5%	4¾%
November 6	6	...
Jan. 23, 1920	..	6
April 15	7	...
June 1	..	7

Holdings of War Paper by Commercial Banks. Throughout this period, as during the war, the commercial banks of the country were called upon to assist the Treasury in its financial operations, in floating the Victory notes and certificates of indebtedness. As shown by the accompanying table, United States securities owned by all the reporting member banks reached a peak on May 2, 1919, and loans secured by government way obligations reached a peak on the 6th of June. Throughout the second half of the year both figures declined appreciably. This resulted in part from efforts wisely made by the Reserve System to induce member banks to rid themselves of their war paper. It was realized that only in this manner could they once again become truly commercial banks. Unfortunately the *total* loans and investments of the reporting member banks did not decline as their holdings of war paper decreased. While the amount of United States securities which they owned and the loans secured

[40] Professor Cassel declares that Bank rates in England as in America were too low through this period. *Money and Foreign Exchange after 1914*, p. 189. For effects of low bank rates, see *ibid.*, pp. 119–121.

In his testimony before the Joint Commission of Agricultural Inquiry, (Part 13, p. 312), Governor Harding declared that the English and American bank rates followed one another without any prearrangement.

by United States war obligations declined by over 600 millions of dollars, their total loans and investments increased by 2.2 billions of dollars.[41]

HOLDINGS OF WAR PAPER BY REPORTING MEMBER BANKS

I	II	III	IV	V
Date	*Number of reporting member banks*	*Total U. S. securities owned*	*Loans secured by U. S. war obligations*	*Total loans and investments*
			(000 omitted)	
1919				
Jan. 3	763	$2,363,291	$1,220,040	$13,697,800
Feb. 7	771	2,466,277	1,198,353	13,670,641
Mar. 7	771	2,934,263	1,133,193	14,136,628
April 4	773	2,757,031	1,106,751	14,082,076
May 2	771	3,267,147	1,085,333	14,679,331
June 6	770	2,868,467	1,420,581	14,945,429
July 3	773	2,255,817	1,369,948	14,499,413
Aug. 1	770	2,386,304	1,353,109	14,797,075
Sept. 5	774	2,557,102	1,294,285	15,233,162
Oct. 3	776	2,197,934	1,318,944	15,391,442
Nov. 7	783	2,042,127	1,141,049	15,570,591
Dec. 5	796	2,019,281	1,028,107	15,438,920
1920				
Jan. 2	798	2,000,983	1,294,409	16,695,218
Feb. 6	804	1,810,590	1,196,200	16,608,565
Mar. 5	808	1,711,610	1,188,602	16,740,952
April 2	811	1,605,890	1,154,228	16,914,093
May 7	810	1,673,828	1,077,164	16,893,793
May 28	814	1,684,364	1,061,590	16,946,112

Discount Operations of the Reserve Banks. The Reserve Banks discounted approximately twice as many bills in 1919 as in 1918. In 1918, 39,753 millions of dollars of bills were discounted for member banks while in 1919, 79,174 millions of dollars were discounted. Of the paper discounted in 1919, 74 billions was war paper, i. e., either the collateral notes of member banks secured by government obligations or the paper of their customers so secured. Of the war paper discounted, the New York and Philadelphia banks took 69% while of the total bills discounted these two banks took 67%. The average maturity

[41] Source: *Sixth Annual Report of the Federal Reserve Board*, pp. 19–20. *Seventh Annual Report of the Federal Reserve Board*, pp. 82–83.

of all the paper discounted ranged from 7.2 days at the New York Bank to 23.41 days at the Kansas City Bank. For the whole country the average maturity was only 10.13 days, due to the preponderance of advances for fifteen days or under, a large proportion of which was renewed again and again. Excluding this fifteen-day paper, most of the paper discounted matured from within sixty-one to ninety days. During 1919, 125 millions of dollars of agricultural and live stock paper was discounted as compared with 156 millions in 1918. Of the agricultural paper discounted 87.3% was taken by the Federal Reserve Banks of Kansas City, Dallas, Chicago and San Francisco. Philadelphia discounted none of this paper and New York and Boston but 1/10 of 1% each. In 1918 discounts of trade acceptances had amounted to 187 millions but in 1919 they declined to 138 millions of dollars of which the Boston, New York, Cleveland and San Francisco Banks took the greater part. Of the 79 billions of dollars of paper discounted, national banks submitted 63 billions and member state banks, 16 billions. In the following tables data covering the rediscount operations of the Reserve System through 1919 and the first five months of 1920 are given.[42]

REDISCOUNT OPERATIONS OF THE FEDERAL RESERVE BANKS—1919
(000 omitted)

Federal Reserve Bank of	*Paper maturing within*				*Agriculture and Live Stock Paper*	*Trade Acceptances*
	15 days	16–30 days	31–60 days	61–90 days		
Boston	$4,131,616	$ 48,748	$ 90,639	$ 404,321	$ 74	$ 10,821
New York	41,769,720	44,814	139,747	495,133	77	57,133
Philadelphia	10,561,289	18,288	32,484	124,423	12	3,753
Cleveland	2,982,293	31,006	53,325	58,888	334	14,091
Richmond	3,959,083	40,366	51,059	78,746	1,689	9,082
Atlanta	1,856,690	23,812	50,268	70,943	4,065	8,234
Chicago	4,067,883	85,623	168,592	217,167	17,047	6,581
St. Louis	1,972,615	25,203	37,515	64,087	1,210	7,946
Minneapolis	551,500	17,490	43,943	40,159	8,428	565
Kansas City	1,328,428	27,620	64,495	82,811	52,243	7,486
Dallas	1,113,886	12,095	32,866	40,491	25,608	1,887
San Francisco	1,836,883	12,558	26,383	60,750	14,488	10,840
Total	$76,131,886	$387,563	$791,395	$1,737,920	$125,285	$138,420

42 Sources: *Sixth Annual Report of the Federal Reserve Board*, pp. 157–180. *Federal Reserve Bulletin*, 1920, pp. 305, 412, 529, 640, 737.

TOTAL BILLS DISCOUNTED BY MONTHS
(000 omitted)

1919—January	$5,994,382	1919—October	$8,060,318
February	4,980,936	November	7,414,498
March	5,473,564	December	7,290,873
April	5,901,402	1920—January	6,241,271
May	7,385,833	February	6,517,439
June	6,328,912	March	6,970,331
July	7,183,435	April	6,229,741
August	6,433,662	May	6,135,984
September	6,762,155		

Banks Rediscounting. A much larger proportion of the membership of the System was accommodated in 1919 and in the first five months of 1920 than in 1918. In May 1920, 4645 banks rediscounted paper with the Reserve Banks, a number equal to 49.8% of the total membership. The largest number rediscounting 1918 had been 3667 in November.[43]

	Number of member banks.	*Number of banks accommodated*	*Percentage of membership accommodated*
1919—January	8713	3316	38.1%
February	8748	3091	35.3
March	8761	3575	40.8
April	8786	3875	44.1
May	8817	4035	45.8
June	8838	4047	45.8
July	8876	3685	41.5
August	8904	3460	38.9
September	8933	3722	41.7
October	8977	3839	42.8
November	9009	3649	40.5
December	9069	3659	40.3
1920—January	9112	3461	38.0
February	9161	3338	36.4
March	9227	3670	39.8
April	9271	4175	45.0
May	9329	4645	49.8

Open-Market Operations of the Reserve Banks. In the following tables the open-market operations of the Regional

[43] Source of table: *Sixth Annual Report of Federal Reserve Board,* p. 180. *Federal Reserve Bulletin,* 1920, p. 1346.

Banks through 1919 and the first five months of 1920 are given: [44]

OPEN-MARKET OPERATIONS OF FEDERAL RESERVE BANKS
(000 omitted)

	Acceptances	*Purchased*	*U. S.*	*Municipal*
	Bankers'	Trade	*Securities*	*Warrants*
1919—January	$ 198,460	$ 3,032	$ 829,461	$1000
February	144,655	2,755	326,473	
March	139,417	4,244	88,860	
April	137,278	3,361	83,843	
May	145,754	1,896	86,623	
June	290,270	1,645	151,086	
July	274,816	1,669	232,905	
August	192,786	1,425	180,874	
September	202,275	2,773	1,870,088	
October	330,273	4,989	72,453	
November	337,009	3,687	56,887	
December	395,627	5,081	758,366	
Total	$2,788,619	$36,558	$4,737,919	$1000
1920—January	299,746	2,706	642,594	
February	296,959	3,349	304,301	
March	298,459	4,901	1,496,408	
April	240,704	6,890	997,144	
May	270,498	3,739	42,723	

MATURITIES OF PURCHASES OF ACCEPTANCES IN 1919
(000 omitted)

Within 15 days	$578,751
From 16–30	455,789
From 31–60	807,326
From 61–90	982,877
Over 90	434

ORIGINS OF BANKERS' ACCEPTANCES
(000 omitted)

In the foreign trade	$2,020,888
In the domestic trade	756,425
Dollar exchange	11,306

In 1919 purchases of bankers' acceptances were a billion dollars greater than in 1918. Of the bankers' bills purchased

[44] Sources: *Sixth Annual Report of the Federal Reserve Board*, pp. 181, 184, 208 and 209.
Seventh Annual Report of the Federal Reserve Board, p. 174.

five-sevenths originated from foreign trade transactions. Data presented in the *Sixth Annual Report of the Federal Reserve Board* show that the largest amount matured from within sixty-one to ninety days.[45] Purchases of trade acceptances declined. In 1918, 61 millions were bought as compared with 37 millions of dollars in 1919. Of the acceptances, both trade and bankers', purchased by the System, the New York Bank took 43%, Boston 13%, San Francisco 12%, and Chicago 10% of the total. It is an interesting fact, as shown by the accompanying table, that the average rate charged on purchased paper through 1919 was higher than the average rate on discounted paper.[46]

	Average Rate Charged On	
	Discounted Paper	*Purchased Paper*
1919—January	4.18%	4.28%
February	4.14	4.24
March	4.15	4.24
April	4.18	4.24
May	4.16	4.24
June	4.19	4.24
July	4.14	4.25
August	4.12	4.25
September	4.18	4.25
October	4.19	4.26
November	4.53	4.47
December	4.67	4.84
For year	4.26	4.36

Normally in central banking the opposite is true. Purchases of United States securities in 1919 were over a billion less than in 1918. Only $1000 worth of municipal warrants were purchased and those by the Atlanta Federal Reserve Bank.

The most serious error committed by the Reserve Banks in their open-market operations, through 1919, assuming of course that administrative compulsion forced them to buy government securities, was their heavy purchases of bankers' acceptances. In spite of the rapid rise in prices during 1919 their purchases of acceptances in that year exceeded by a billion dollars their purchases in 1918. In releasing their funds in this manner the Reserve Banks simply added to the purchasing power media outstanding and thereby promoted the rise in prices. The Reserve

[45] The report, however, gives the average maturity as 50.45 days (p. 179).
[46] *Sixth Annual Report of the Federal Reserve Board,* pp. 176–177.

Banks had complete control over purchases of acceptances and they alone are to be held responsible for increasing their open-market operations during a period of rising prices. These purchases they would probably justify as attempts to assist our foreign trade[47] and the development of a discount market in New York. During a period of rising prices the importance of both pales beside the importance of maintaining a stable price level. If stability of the price level is ever to be realized, if cyclical fluctuations are to be reduced, the Reserve Banks must cease participating in the open-market during the upward swing of the price cycle, otherwise their funds will only stimulate the upward movement.

Inter-District Rediscounting. Throughout 1919 the rediscounting of commercial paper and the selling of acceptances was continuous. Sales of acceptances amounted to $739,499,000 and rediscounts of commercial paper to $2,658,254,000.[48] The acceptances which were sold had been purchased by the New York Federal Reserve Bank, under an agreement approved by the Board, for the account of the Cleveland, Chicago, Minneapolis, Kansas City and San Francisco Banks. The principal rediscounting Reserve Banks were New York, Richmond, Philadelphia, Dallas and Boston. The borrowing banks were thus located, for the most part, in the industrial sections of the East. In addition to sales of acceptances the chief reasons for the inter-district movement of funds were the fiscal operations of the Government, seasonal requirements and the credit needs of the industrial sections. Industries were to an increasing extent calling upon their banks for funds and they in turn resorted to the Reserve Banks. The chief lending Banks were Chicago, Minneapolis, Cleveland, San Francisco and St. Louis.[49]

The policy of the Board in inter-district rediscounting has been to equalize the reserve position of the Regional Banks. From the following table it will be noted that the reserve percentage of the Federal Reserve Banks of Boston, Philadelphia and New York would have fallen below the legal minimum had it not been for the inter-district movement of funds.[50]

[47] In this connection it might be noted that in so far as the purchases of acceptances raised prices in the United States and raised them above prices prevailing in foreign countries, America's export trade was injured.

[48] *Sixth Annual Report of the Federal Reserve Board,* p. 7.

[49] *Ibid.*

[50] *Sixth Annual Report of the Federal Reserve Board,* p. 8.

On the twenty-seventh of February 1920, the United States Treasurer

INTERDISTRICT MOVEMENT OF BILLS DISCOUNTED OR PURCHASED BY FEDERAL RESERVE BANKS DURING THE PERIOD FROM JAN. 1, TO DEC. 31, 1919.

(000 omitted)

Federal Reserve Banks	*Rediscounts and sales between Federal Reserve Banks*				*Acceptances purchased for account of other Federal Reserve Banks*		*Interdistrict movement of discounted and purchased paper*	
	Rediscounted or sold by—	Discounted or purchased by—	Excess of rediscounts and sales	Excess of discounts and purchases	Amount purchased by—	Amount purchased for account of—	Excess movement from—	Excess movement to—
Boston	$131,165	$.....	$131,165	$.....	.....	$.....	$131,165	$.....
New York	312,740	55,827	256,913	.....	739,499	.....	996,412	.....
Philadelphia	826,521	.....	826,521	.....	.....	.....	826,521	.....
Cleveland	.....	284,317	.....	284,317	.....	179,592	.....	463,909
Richmond	842,946	5,080	837,866	.....	.....	.....	837,866	.....
Atlanta	82,690	10,065	72,625	.....	.....	.....	72,625	.....
Chicago	1 124	1,423,815	.....	1,423,691	.....	160,173	.....	1,583,864
St. Louis	.....	180,529	.....	180,529	.....	500	.....	181,029
Minneapolis	1 78	447,895	.....	447,817	.....	88,696	.....	536,513
Kansas City	56,500	50,099	6,401	.....	.....	22,461	.....	16,060
Dallas	404,975	67,577	337,398	.....	.....	.....	337,398	.....
San Francisco	1 515	133,050	.....	132,535	.....	288,077	.....	420,612
Total	2,658,254	2,658,254	2,468,889	2,468,889	739,499	739,499	3,201,987	3,201,987

1 Acceptances purchased in the open market through the Federal Reserve Bank of New York and returned to that bank before maturity.

RESERVE POSITION OF THE TWELVE FEDERAL RESERVE BANKS, ALSO AMOUNT OF PAPER REDISCOUNTED WITH OR SOLD TO AND HELD BY OTHER FEDERAL RESERVE BANKS AS AT CLOSE OF BUSINESS, DEC. 26, 1919

Banks	*Bills rediscounted with or sold to other Federal Reserve Banks*	*Bills discounted for or purchased from other Federal Reserve Banks*	*Ratio of total reserves to combined net deposit and Federal Reserve note liabilities*	
			Actual	*After adjustment of reserves by deducting amount of bills rediscounted with or sold to other Federal Reserve Banks and adding amount of bills discounted for or purchased from other Federal Reserve Banks*
		(000 omitted)		
			Per cent.	*Per cent.*
Boston	$69,899	$.....	44.0	24.3
New York...	58,201	.....	40.0	36.2
Philadelphia..	27,615	.....	40.8	32.7
Cleveland ...	.....	12,265	46.3	49.4
Richmond ...	.....	5,080	40.9	43.5
Atlanta	.....	5,065	52.8	55.2
Chicago	.....	60,090	50.6	58.8
St. Louis....	.....	29,022	46.5	60.5
Minneapolis..	.....	.....	39.4	39.4
Kansas City..	13,000	9,805	43.1	41.3
Dallas	.....	32,123	49.4	77.0
San Francisco	.....	15,265	54.9	59.3

deposited $50,000,000 in standard silver dollars with the Federal Reserve Bank of New York to help build up its reserve ratio. In commenting upon this the Board, in its published statement for the week ending Feb. 27, said:

"Gold reserves (of the system) show a further reduction of about three millions, while the increase of over fifty millions in other reserve cash represents largely a transfer of silver accumulated by the Treasury with a view to meeting Oriental demands. Silver so transferred will gradually be used for that purpose by the New York Federal Reserve Bank, which is conducting the operation under the direction of the Federal Reserve Board. Meanwhile the transfer serves to replenish the balance of the Treasury with the New York Bank in anticipation of March 15, demands without calls upon depository banks."

Through 1919 the rates charged on inter-district rediscounting were fixed for each transaction at the time of its occurrence. In establishing these rates the policy of the Board has generally been to set the rate higher than the Bank rates prevailing at the Regional Bank receiving the accommodation. If it has been found desirable to charge the borrowing Reserve Bank more than it charges its member banks, why is it not equally desirable, one might inquire, for the Reserve Banks to charge the member banks more than they charge their customers, i. e., for the Bank rates to rule above the market?

Decline in the Percentage of Reserves. The increase in the discount and open-market operations of the Federal Reserve System during 1919 was primarily responsible for the decline in its reserve percentage. Though heavy exports of gold did occur, as shown in the accompanying table, they were not the principal cause of the low reserve percentages.[51]

EXPORTS AND IMPORTS OF GOLD
Jan. 1919–May, 1920
(000 omitted)

		Exports	*Imports*
1919,	January	3,396	2,113
	February	3,110	3,945
	March	3,803	10,481
	April	1,770	6,692
	May	1,956	1,080
	June	82,973	26,134
	July	54,673	1,846
	August	45,189	2,490
	September	29,050	1,472
	October	44,149	4,970
	November	51,858	2,397
	December	46,257	12,914

For the entire year 1920, the System's cash reserves other than gold increased $131,000,000, of which $98,000,000 was in this bank. In commenting on the movement of reserves and reserve ratio of the System in 1920, the Board said in its Annual Report for that year (p. 46):

"Total Cash reserves show an increase of 128 millions, or from 2,121 millions on January 2 to 2,249 millions on December 31, a larger gain in other cash reserves arising chiefly from deposits of silver dollars by the Treasury being partially offset by a loss of four millions of gold."

The New York Bank was penalized an amount equal to $23,301.10 for deficiency in reserves during 1920. (*Annual Report of the Federal Reserve Bank of New York,* 1920, p. 39).

[51] Source: *Monthly Summary of Foreign and Domestic Commerce of the United States.*

		Exports	*Imports*
1920,	January	47,817	12,018
	February	43,023	4,473
	March	47,050	16,985
	April	44,644	48,522
	May	7,562	15,688

Through 1919 the net loss of gold amounted to $291,651,000, the larger part of which flowed to Japan, Argentina, Spain, Hongkong, China, India, Mexico, Venezuela and Uruguay, countries with which America had had adverse balance of payments during the war. Some of the members of the Board were very much elated over this efflux feeling that it would induce a contraction of credit in the United States. Whether it would or not was dependent, of course, upon the discount and credit policies of the Reserve Banks, and because these were unchanged the outflow of gold did not result in the hoped-for contraction. The ratio of total cash reserves to net deposits and Federal Reserve note liability combined declined from 51.3% on January 3, 1919, to 42.2% on May 14, 1920. The cash reserves had in the meanwhile declined from 2152 to 2078 millions, while note and deposit liabilities had increased from 4199 to 4922 millions of dollars.

Summary. The economic situation which had developed through 1919 in America was such as needed careful supervision and restraint. The speculative spirit which had been held in abeyance during the war was released. As the Government withdrew from the market as a heavy borrower, the released purchasing power and additional funds borrowed from the Reserve Banks were employed by traders and banks in marking up the price of land, securities, and commodities.[52] It was not employed in furthering production or distribution but in the hoarding of goods and in speculation. Increases which had taken place in the price level did not arise from any real scarcity of goods nor from a dislocation of industry but were the direct result of a growth in money and credit. It was these increases in purchasing power media which had made effective the desire of the Government, of traders, of speculators, and of foreigners, for goods and securities. Whether increases in credit engendered the rise in prices, which was itself the cause of a greater need for money, or whether increases in both credit and money led to a rise in the price level,

[52] *Monthly Review of Credit and Business Conditions*, Federal Reserve Bank of New York, November 20, 1919, p. 1, and *Annual Report of the Comptroller of the Currency*, 1919, p. 1107 and 1920, p. 94

sufficient it is to state that the methods followed by the Government in securing funds, abetted by the discount policy of the Reserve System, were responsible for the increase in the purchasing power media which was itself the primary cause of the rise in prices. A theory of prices is a necessary prerequisite for the formulation of a discount policy. Our concept of the effectiveness of Bank rates as regulators of credit expansion is necessarily dependent upon the reasons which we hold responsible for price fluctuations. Because of the importance of price theories and their bearing on the discount policies of central banks, we shall now make a survey of the price theories of the Federal Reserve Board.

Price Theories of the Federal Reserve Board. As we read the official organs of the Federal Reserve Board we are struck by the fact that the Board has not consistently sponsored any one theory of prices. At one time the members seemed to be exponents of the quantity theory, at another they would declare quite definitely that increases in money and credit are the result of rising prices and not the cause. The only reference to inflation in the 1916 *Bulletin* is an editorial explaining that the expansion of the currency during the previous year was not caused by an increasing volume of Reserve notes but was the result of an increase in the monetary gold stock of the country.[53] In 1917, the *Bulletin* itself has nothing to say on inflation but reprints, evidently with approval, an article entitled, "The Progress of Inflation," which had appeared in the London *Economist*.[54] The *Economist* took the stand that inflation in England had been caused by the multiplication of legal-tender money and bank credit. It emphasized the elementary principle that the value of a thing is not improved by increasing its volume and that the rise in prices had increased the cost of the war to the British people and had depreciated the pound sterling.

In an explanation of the high prices prevailing in 1917, the Board, in its *Fourth Annual Report*, laid emphasis on the fact that able-bodied men had withdrawn from their occupations, that industry had suffered dislocation, that overseas trade had been partly suspended, and that a shortage of commodities existed, but it added that it was not unmindful of the effect of the growth of credit upon prices.[55] Once for all let us get rid of the fallacy

[53] P. 212.
[54] PP. 375–377.
[55] P. 17.

that a dislocation of industry and a shortage of commodities were the cause of the rising price levels throughout the world from 1919 to 1920. Measuring the commodities available for consumption by a production index, we find by referring to the index prepared by the Federal Reserve Board that this was higher in each of the war years than in 1914.[56] It is true that our exports to Europe increased and thereby reduced the stock of goods which would have been available for domestic consumption, but America's exports did not increase to an extent which would account for a rise in the price level of 126% from 1914 to 1920. To assert that this rise in prices was due entirely to a shortage of commodities is to assert that production in the United States through the war declined to 44% of its 1913 level. Production actually increased. Since changes in the denominator of the equation of exchange do not explain the inflation which has occurred, changes in the amount of money and deposit currency must. In this connection let us quote Professor Cassel:[57]

> The popular idea that a shortage in commodities could cause a rise of prices which would necessitate the creation of more money is obviously a fallacy. Popular explanations of the rise of prices generally start from such factors as the high costs of transportation, the prohibition of imports, the diminished output of labor, etc. Such factors can obviously have an influence on the general level of prices only in so far as they contribute to a decrease in the total mass of commodities.

Beginning with 1918 the *Bulletin* devoted an increasing amount of space to the causes and nature of the rising price level in America. In its April issue[58] a warning was sounded against undue reliance on the banking institutions of the country as a means of sustaining long-term financing. Such dependence, stated the Board, would necessarily result in the creation of bank credits protected not by short-term self-liquidating paper but by the securities offered as collateral. The consequences of such practices, unless accompanied by curtailed consumption, would be advancing prices. In its June issue[59] the *Bulletin* declared that a rise in prices resulted when currency, whether in the form of

[56] *Federal Reserve Bulletin,* 1922, p. 1414.

[57] *Some Leading Propositions for an International Discussion of the World's Monetary Problem,* p. 261.

[58] P. 249.

[59] P. 486.

money or credit, increases at a faster rate than the volume of current available goods. This declaration is practically a statement of the quantity theory.

Relation between Federal Reserve Notes and Prices. Beginning in October 1918, the *Bulletin* set out upon its campaign of proving that Reserve notes were not the cause but the effect of a rising price level, the identical theory held by the directors of the Bank of England in 1810.[60] Inflation occurs when loans are made on some other basis than current production, the Board declared, and whatever inflation there may be can not be attributed to overissues of Reserve notes.[61] That the Board did not deviate from this stand is evident from the following quotations:

October 1918	". . . whatever inflation of prices may be said to exist cannot properly be said to have been induced by overissue of Federal Reserve notes: . . . the notes being merely an incident or result of a process begun at the individual lending banks." [62]
November	". . . the belief in a great inflation of the currency has relatively little to support it." [63]
December	The issue and redemption of Federal Reserve notes "respond to the requirements of trade." [64]
February 1919	In commenting upon the January decrease in Reserve notes the *Bulletin* says the decline shows that "with reduced business requirements, the circulation will reduce itself with the same facility as it had previously shown in its prewar expansion to meet the increased requirements." [65]
August	"The difficulty, indeed the impossibility, of keeping in circulation an excessive volume of Federal Reserve notes should be understood. . . . They are issued only as a need for them develops. . . . Thus there cannot at any time be more Federal Reserve notes in circulation than the needs of the country at the present level of prices

[60] see p. 10.
[61] *Federal Reserve Bulletin,* 1918, p. 928.
[62] *Ibid.*
[63] *Ibid.,* p. 1047.
[64] *Ibid.,* p. 1177.
[65] *Federal Reserve Bulletin,* 1919, p. 102.

require, and as the need abates the volume of notes outstanding will be correspondingly reduced through redemption. The increased volume of Federal Reserve notes in circulation during the past three years, in so far as it is not the result of direct exchanges for gold and gold certificates which have been withdrawn from circulation, is the effect of advancing wages and prices, and not their cause." [66]

Even though Governor Harding made the statement given above that increased issues of Federal Reserve notes were the result of rising prices, he did admit before a subcommittee of the House Committee on Banking and Currency that a rising level of prices might under certain circumstances result from an inflation of the currency.[67]

Senator Glass: Let me ask you this question: How could Congress inflate the Federal reserve currency? How could the board inflate the Federal reserve currency, with or without a mandate from Congress? You cannot issue a dollar of Federal reserve currency except upon application of a bank.

Mr. Harding: The only way they could do it, Mr. Chairman, would be for the board to use any influence it might possess with the directors of the Federal reserve banks. There are nine directors, three appointed by the Federal Reserve Board and six elected by member banks. They are divided in groups, large-size banks, middle-size banks, and small banks. Of these six directors elected by Federal reserve banks, three are class A directors and are representatives of the banks. They may be bank officials or bank directors. Three are representatives of business and agriculture. They may be stockholders in the banks

[66] *Federal Reserve Bulletin,* 1919, pp. 701–702. This is a quotation from Governor Harding's letter to Senator McLean, Chairman of the Senate Committee on Banking and Currency, in response to Senate Resolution #142. (*Congressional Record,* Vol. 58, p. 3395) (See also address by Governor Harding entitled, "What the Federal Reserve System Is, and What It Is Not.") This resolution was introduced by Senator Myers on July 29, 1919. It directed the Committee on Banking and Currency to report whether Congress should enact legislation providing for a gradual reduction of the money in circulation, and if so, to report how rapidly this should be accomplished.

[67] *Amendments to Federal Farm Loan and Federal Reserve Acts,* pp. 46–47.

but must not be officials or directors of banks. Class C directors, who represent the Government and the public, must not be either stockholders or directors of banks.

The only way the Federal Reserve Board could bring about an inflation of currency would be to use its influence upon the directors of Federal reserve banks, to tell them to go ahead and discount any paper which is offered, without regard to the solvency of the paper, and its desirability. In other words, to rediscount fast and loose.

If we did that we would have the Federal reserve banks in the position of the Philippine banks and the Cuban banks, in a short time.

Senator Glass: Not only that, but that is to assume that the directors of the member banks of the United States have so little prudence—

Mr. Harding: Absolutely.

Senator Glass: And so little banking instinct, that they would agree to fill up their portfolios with this worthless paper.

September 1919 ". . . the occasion of the issue of a Federal Reserve note is determined not *by* the bank for itself but *for* the bank by the community." [68]

October ". . . prices at wholesale rise first. In their wake there follows of necessity a rise of retail prices and in consequence a need for increase of circulation. It may be stated as a general proposition, therefore, that changes in the volume of currency in times of expansion follow price changes. They do not precede them. There is, therefore, no foundation in present American experience for the view still sometimes urged that changes in the volume of currency are responsible for changes in prices.

While it may be true as a theoretical proposition that prices at retail could not rise without an increase in the volume of currency and that refusal to supply currency might impede an upward movement of retail prices (though it is more likely that refusal to supply currency would lead the community to adopt devices such as due bills or bearer checks, etc., of small denominations to meet

[68] *Federal Reserve Bulletin,* 1919, p. 814.

the demand for currency substitutes), it is also true that such a method of controlling prices, if successful, would be at the cost of business disaster. Prices at wholesale are not appreciably affected by the volume of pocket money. It is the volume of circulating bank credit that influences the trend of wholesale prices. Restriction of bank-note issues would not, therefore, act as a direct restraint upon the movement of wholesale prices. Such effect as might conceivably be exerted from this source would at best be indirect, and would effectuate itself by what would be tantamount to a breakdown in the organization of trade by making it difficult for retail prices to adjust themselves to changes, proceeding from more or less fundamental influences, in the movement of wholesale prices. The pocket currency of the country is a function of the general money volume of the country's business. To attempt to turn it into an instrument of credit control would be a perversion of the currency function of the banking system.

The correction of the price situation will come in a more natural and economic manner. Prices at retail will fall to more normal levels as prices at wholesale do. Prices at wholesale will fall as savings accumulate and liquidation of the war-loan accounts of the banks ensues and production advances to the point where it more nearly matches the great increase in the volume of circulating or purchasing media which have been called forth during the successive emergencies of recent years." [69]

Commenting on the period from June 27, 1919, to June 25, 1920, the Board said:

July 1920

"It will be observed that while both notes and deposits have passed through periods of fluctuation, so that their growth is by no means parallel, the general tendency throughout the country has been that of quite steadily enlarging the circula-

[69] *Federal Reserve Bulletin*, 1919, p. 913.

> tion of notes. This is partly due to the fact that the note issue has been required in current use because of the great rise in prices and the consequent necessity of carrying a larger supply of money in pocket with which to meet current requirements. It is also in part due to the growing necessity for a larger amount of actual currency for payment over the counter at the several banks of the country in order that current demands of depositors, rendered more intense by the high prices, might be freely met." [70]

The views of the Board that Reserve notes were issued in consequence of a rise in price were also expressed by Carter Glass while he was Secretary of the Treasury.[71] Similarly in his annual report for 1920 the Comptroller of the Currency made the interesting statement that there had been no inflation of the currency, giving as his reason that the ratio of money in circulation to the total resources of all banks, both national and state, had fallen from 13% on June 1, 1914, to 10% on July 1, 1920.[72] Even though the Board tenaciously held to the view that Reserve notes were the result of higher prices, they did admit that a refusal on their part to issue Reserve notes would check the upward rise in prices but only at the risk of a business catastrophe. If it is true, as the Board admitted, that the rise in prices might be checked by ceasing to issue Federal Reserve notes, should it not also follow that increases in the volume of Reserve notes would lead to a higher price level? In its issue for the 27th of December, 1919, the *Commercial and Financial Chronicle* [73] said it was difficult to understand why the Board, so strongly committed to the policy of correcting inflation and curing speculation, should permit a steady expansion in Reserve notes. It termed the Board's theory that no more notes can be forced into circulation than the channels of trade require "all fol-de-rol." A week later the *Chronicle* stated [74] that the time for timidity had passed and that the issuance of Reserve notes should be stopped. By February the *Chronicle* had lost all patience with the Board and declared that the time had come for

[70] *Federal Reserve Bulletin,* 1920, p. 664.
[71] *Finance Report,* 1919, p. 17.
[72] *Annual Report of the Comptroller of the Currency,* 1920, Vol. I, p. 21.
[73] P. 2382.
[74] P. 2.

some plain speaking, saying that as the autumnal drain was passed there was no possible justification for the increases which had occurred since the first of the year in the amount of Reserve notes outstanding.[75] In this same connection Professor Hollander wrote that as long as the Board insisted that increasing note issues were the effect and not the cause of rising prices it was unavailing to enjoin restraint in issuing notes upon the Regional banks.[76]

The Board's explanation of the relationship between currency and prices was diametrically opposed to that set forth by the Cunliffe Committee composed of some of Britain's most able economists and bankers. They evidently believed that the increased issues of currency notes in England had had something to do with the rising price level, for they recommended that the amount in circulation be gradually reduced.[77] Likewise it was contrary to the view held by the Supreme Economic Council.[78]

Relation between Credit and Prices. If Reserve notes were not redundant, as the Board repeatedly declared, we should expect it to hold the position that credit also was not redundant

[75] PP. 588–590.

[76] *The Commercial and Financial Chronicle,* January 10, 1920, p. 118. See, also, statement by Dean Joseph French Johnson in the issue for January 24, 1920, p. 313.

Is it not somewhat strange that in spite of the Board's belief that increases in money are the effect of rising prices they should have placed orders with the Bureau of Engraving and Printing in the early part of 1917 for $900,000,000 of Reserve notes anticipating that these would be needed if America entered the war?

[77] The Cunliffe Committee reported: We have considered whether steps should not be taken at an early date to impose limitations upon the fiduciary portion of the currency note issue with a view to the restoration of the normal arrangements under which demands for new currency operate to reduce the reserve in the banking department of the Bank of England. In view of the fact that demobilization is approaching completion and that as we hope fresh Government borrowing will shortly cease, we consider that effect should now be given to the recommendation made in our interim report that the actual maximum fiduciary circulation in any year should become the legal maximum for the following year, subject only to the emergency arrangements which we proposed in paragraph 33 of our interim report. (*Federal Reserve Bulletin,* 1920, pp. 142–143.)

[78] The Supreme Council on Economic Conditions reported that the immense increase in the spending power of Europe which is reflected in . . . extravagance had been brought about by credit and currency inflation during the war. . . . It is essential to the recovery of Europe that the manufacture of additional paper money and Government credits should be brought to an end, and this must be effected as soon as the war expenditure has been terminated. (*Federal Reserve Bulletin,* 1920, p. 365.)

and that expansions in the volume of credit were in response to trade needs. One could not logically be the result of a rising price level and the other the cause. There is no fundamental difference between the issuance of Reserve notes and the creation of Reserve deposits upon which member banks may extend additional amounts of credit. Member banks were encouraged to borrow from the Reserve Banks and they alone determined whether they should take their borrowings out in the form of notes or allow them to remain as deposits.

In the Fall of 1918 the Board evidently believed that rising prices were mainly the result of creations of deposit credits,[79] but, as the following quotations reveal, its position was gradually modified until in June of 1920 it apparently held that credit expansions, like increased issues of Reserve notes, were the effect of rising prices.

November 1918

"Primarily, it is not the issue of notes, but the creation of deposit credits on the books of the banks, for the purpose of enabling borrowers to buy and carry Government bonds, and rendered necessary because of the failure of the public to save sufficiently, that creates the buying power which advances prices." [80] The *Bulletin* went on to declare that expansions of credit engendered inflation when the increase of prices brought no commensurate or offsetting increase in production. Might it not better be said that an increase in prices usually reflects the fact that credit expansions have not called forth compensating increases in production?

December

In the December *Bulletin* the Board warned the public that inflation would be a continuous menace so long as banks continued to loan on government obligations.[81]

January 1919

"The price equation has been fundamentally altered in both its terms—on the monetary side in the supply and distribution of the metallic medium as well as, much more largely, in the supply of credit; on the commodity side through changes in the volume and distribution of goods

[79] *Federal Reserve Bulletin*, 1918, p. 1048.
[80] Pp. 1047–1048.
[81] P. 1170.

and the location of existing stocks of these goods." [82]

April 1919

The *Bulletin* in April reiterated the idea expressed in December that deflation would not occur until war paper had been eliminated from bank portfolios.[83]

May

"So long as the condition of inflation referred to continues to exist as at present, it must be expected that reductions of price will occur slowly as a result of changes in the demand for and supply of commodities . . . permanent reduction of prices to anything approaching the old normal level can not be expected to occur without a readjustment of the volume of banking credit to correspond with the current volume of commerce and business as reflected in the offerings of liquid commercial paper." [84]

June

"The attempt of our financial system to advance credit at a rate more rapid than justified by the rate of saving would . . . simply mean advance in the 'cost of living' to the average consumer through a further aggravation of existing conditions of inflation in banking and credit." [85]

September

Credit expansion is regarded as a "considerable factor in our financial and price situation," calling for correction by increased production, savings, and investment of the proceeds of savings in government bonds.[86]

In the October *Bulletin* the Board begins to abandon the theory it expressed the previous November as regards the relationship between credit and prices.

"Of itself and alone, credit can not be said to determine prices. . . . It can affect prices . . . only when acting in conjunction with other favoring conditions." In times of slow trade, "there is little demand for additional credit" and "little effect is exerted by credit in changing prices."

82 P. 9.
83 P. 310.
84 Pp. 410–411.
85 P. 524.
86 P. 814.

October 1919

In times of brisk trade, the demand for credit is large and "Its influence on prices [is] unmistakable." In short the volume of credit in use depends as much upon the state of trade as upon the state of credit. "Credit, as such, can not . . . be said to be the cause of price changes," but by facilitating trade, it becomes "a decisive factor in the price situation. . . . While credit . . . can not create a situation which results in high prices, it is equally true that a situation which results in high prices can not eventuate without the assistance and mediation of credit. While there must be a desire for the use of credit before credit can expand, once under way an expansion of trade gets so much encouragement, stimulus and support from an expansion of credit that it is at times difficult to say which is more cause and which is more effect, so closely interdependent and interwoven are the two." [87]

December

"This change in the price level [i. e., the increase in prices in November 1919] is evidently to be attributed mainly to the continued expansion of banking credit throughout the world." [88]

In the May 1920, *Bulletin*, the chief emphasis was placed on factors other than credit.

May 1920

"Current discussion of banking and industrial conditions seems to be more and more disposed . . . to place the responsibility for the present [price] . . . outlook upon inflation or overextension of credit and to minimize the importance of changes in production or lessened efficiency of labor and capital." Attention is called to "the very material decline in production," "falling off in the supply of commodities" and "general indisposition to save [which] would . . . produce advance in prices, regardless of the credit situation." So long as heavy exportations continue and ability to provide domestic fixed capital is not increased, "disproportion between demand and production will

[87] Pp. 911–912.
[88] P. 1110.

> prevent prices from being definitely reduced, regardless of banking policy." [89]

In the June 1920 *Bulletin* the Board apparently adopted the attitude that credit expansions were a result of inflated prices for it quotes a resolution adopted at the financial conference held May 18, 1920, between the Board, the Advisory Council and Class "A" Directors of the Federal Reserve Banks, beginning as follows: "The whole country is suffering from inflation of prices, with the consequent inflation of credit"; and also the report of the Council to the Board on May 18, which gives as one of the "causes of continued expansion of credits and of Federal Reserve note issues," "the vicious circle of increasing wages and prices." [90]

In September 1920, the Board stresses the importance of international conditions as one of the factors in domestic prices.

September

> "Exactly how far fluctuations in prices are due to changes in volume of production and how far to banking inflation is not capable of accurate determination. There can, however, be no difference of opinion as to the fact that changes in the levels of prices in different countries are influenced by all of these factors. . . . Without doubt the rapid and extensive fluctuations in the value of exchange . . . have profoundly disturbed prices from time to time and may be regarded as factors explanatory of the extremes to which price quotations have gone." [91]

If the theory of prices which the Board last expounded were correct, if money and credit were the result and not the cause of an increasing level of prices, central banks would immediately and forever be absolved from all blame for rising prices.[92] Undoubtedly the proponents of this theory would hold such factors

[89] PP. 452–453.

[90] P. 581.

[91] P. 905.

[92] Strangely enough A. C. Miller, a member of the Federal Reserve Board, terms the Board's theory of prices "the currency theory." (*Federal Reserve Policy,* p. 184.) This terminology is a bit confusing as some may be led to feel that it has some relationship to the "currency principle."

The price theories held by the central banks in Holland and Denmark were similar to the later theories expounded by the Federal Reserve Board. See Cassel, *Money and Foreign Exchange after 1914,* pp. 124–125.

as a decline in production and the inefficiency of labor responsible for the rising price level, factors over which central banks would have no control. If such were the case, there would be little purpose in developing a discount policy. It would not matter whether the Bank rate stood at 1% or 10% for it would have no effect in checking an advance in prices. Price fluctuations could never, if we were to accept this theory, be controlled to the slightest extent by central banks. Theirs would be the rôle not of directing the course of business into safe channels but of following whither the current might lead. Fortunately this theory of prices from the time of the Bullion Report and before has been known to be fallacious. It is the most elementary proposition in economics that the multiplication of money and credit, whether forcibly put out by a Government or whether extended by a central reserve bank to commercial banks who have been induced through low discount rates to borrow beyond the needs of the community, will lead to increases in the price level. In fact, a rise in prices is prima facie evidence that money and credit have become redundant.

Federal Reserve Board Committed to a Policy of Deflation. Logically, in view of its theory of prices, we should expect the Board to take no action through 1919 in checking inflation. If rising prices were not the result of an increased volume of money and credit, as they had declared, would not the Reserve Banks be helpless in attempting to remedy the situation? Yet we find, as we study this period, that the Board was active in its efforts to control credit.[93] Indeed one Reserve Bank declared that the System was expected to "control and regulate the volume of credit so that credit conditions might be as stable as possible."[94] This view is entirely justified, for stability of credit conditions is a prerequisite to a stabilization of prices. Could the Board, however, hold its theory of prices and subscribe to this statement of the New York Bank? Whether it could do so logically or not, as a matter of fact it did make vigorous efforts to exercise credit control and to stop the upward tendency in prices.

A survey of the official publications of the Board and the statements of its members through 1919 reveals that the members were opposed to the continuance of inflation and in fact were

[93] See testimony of Governor Strong, *Hearing before the Joint Commission of Agricultural Inquiry*, Vol. 2, p. 713.

[94] *Monthly Review*, Federal Reserve Bank of New York, July 31, 1920, p. 2.

committed to a policy of orderly deflation.[95] In reply to a communication received from Senator Owen, Governor Harding stated that the Board had endeavored through the whole of 1919 to control credit by admonitions and warnings.[96] A little later Governor Harding declared in an address delivered before a conference attended by the members of the Board, the Advisory Council and the Class "A" directors of the Reserve Banks that the tendency for prices to advance and production to decline was most unsatisfactory, and that the nation's problem was to check further expansion and to increase production.[97] Governor Harding's remarks were approved unanimously by the members attending the conference. The attitude of the Board is seen again in its reply to the McCormick resolution.

Undoubtedly at that time the Administration, Congress and the great bulk of the American people were in sympathy with that point of view.[98] On the 8th of August, 1919, President Wilson, in an address delivered at a joint meeting of the two Houses of Congress, called attention to the rising costs of living and suggested the legislative measures which he felt would be most effective in bringing about a reduction. He said in part:[99]

> The prices the people of this country are paying for everything that it is necessary for them to use in order to live are not justified by a shortage in supply, either present or prospective, and are in many cases artificially and deliberately created by vicious practices which ought immediately be checked by law.

As correctives of the situation he urged that Congress prolong the life of the Food-Control Act and extend its scope to include not only food but food stuffs, fuel, clothing and other commodities which were necessaries of life; that Congress enact a measure limiting the time during which goods might be kept in storage, and prescribing that goods released from storage for interstate shipment be marked with the selling or market price of the commodity on the date at which they were stored; and that it be required that goods destined for interstate commerce should be marked with the price at which they left the hands of the pro-

[95] *Fifth Annual Report of the Federal Reserve Board,* p. 87.
[96] *The Commercial and Financial Chronicle,* May 8, 1920, p. 1934.
[97] *Ibid.,* May 22, 1920, pp. 2138–2139.
[98] See testimony of Irving Fisher, *Stabilization of Purchasing Power of Money,* p. 18.
[99] *Congressional Record,* Vol. 58, pp. 3718–3721.

ducers. He suggested further that licenses be required for all corporations engaged in interstate commerce and that in issuing such licenses specific regulations be devised to prevent unconscionable profits. If the bill reviving the Capital Issues Committee were passed, the President felt that the people would be saved from the unscrupulous promotor and distributor of worthless securities. The free processes of supply and demand would not operate, he declared, until the world was at peace. Prices stood at 216% of the 1913 level in August when the President made his address; by May of 1920 they had advanced to 247%. The President had not mentioned in his address the main cause of the advance in prices, inflation of money and credit. That continued. Soon after the delivery of the President's message the Secretary of the Treasury called a conference of the Governors of the Reserve Banks and urged that they warn member banks to curtail speculative loans so that legitimate business might not be penalized. The Secretary felt that speculative loans should be curtailed before discount rates were raised at the Reserve Banks and higher interest rates were assessed against legitimate business.[100]

On the 17th of May, 1920, the Senate adopted the following resolution, introduced by Senator McCormick:[101]

> *Resolved,* That the Federal Reserve Board be directed to advise the Senate what steps it purposes to take or to recommend to the member banks of the Federal Reserve System to meet the existing inflation of currency and credits and consequent high prices, and what further steps it purposes to take or recommend to mobilize credits in order to move the 1920 crop.

In discussing the resolution, Senator McCormick stated that it was not to be implied from the wording that inflation in America was due to any activities or lack of activities on the part of the Reserve System. This resolution was passed unanimously with but little discussion. Senator Gronna expressed the fear that it might raise rates of interest to farmers, but Senator McCormick assured him that there was no reference to rates of interest in the

[100] *Congressional Record,* Vol. 62, p. 1243. Secretary Houston was also in favor of deflation. (*The Commercial and Financial Chronicle,* May 1, 1920, p. 1807.)

[101] *Congressional Record,* Vol. 59, pp. 7145–7146. The Board's reply to the resolution may be found in *Hearing before the Joint Commission of Agricultural Inquiry,* Part 13, pp. 338–341.

resolution. In the House, Representative King bitterly assailed the Reserve System, claiming that the people of the country were undernourished and garbed in rags because of its loans to profiteers and speculators. On February 28 he introduced a resolution calling for an investigation of the administration of the System.[102] In support of this resolution he submitted the statement of a Chicago banker who said that the rising prices were the result of an increased volume of credit and currency and urged that no more Reserve notes be issued and that member banks be limited in their borrowings from their Reserve Bank to one-half their capital. He suggested further that the Reserve Banks should not operate in the open market and that their rates of discounts should be fixed to discourage member banks from borrowing except in time of stress.[103] On May 21, as a remedy for the high prices, Representative King introduced a bill preventing renewals on commodity paper.[104] Its enactment would have been a splendid thing, for during 1919–1920 goods were hoarded for months in warehouses on funds secured from the Reserve Banks. The strength of the Agriculturalists in Congress was such, however, as to preclude serious consideration of the measure.

There can be no doubt but that the prevailing sentiment in Congress, irrespective of party lines, was in favor of deflation. This should be kept in mind when we discuss the criticisms of the System through 1920 and 1921. Not alone was the Government of the United States committed to a policy of anti-inflation, but the Governments of Great Britain, France and Italy had committed themselves similarly.[105]

Measures taken by the Reserve System to Control Credit through 1919–1920. Many steps were taken by the Reserve System through this period or were suggested in the endeavor to bring about a deflation of credits, among which the following were the most important:

1) The issuance of warnings;
2) The use of moral suasion;
3) Advising banks to reduce their outstanding lines of credit and

102 *The Commercial and Financial Chronicle,* May 15, 1920, pp. 2032–2033. This resolution was passed (H. R. No. 476) and referred to the House Committee on Rules but was never reported upon.

103 *Congressional Record,* Vol. 59, pp. 8915–8916.

104 *Ibid.*, pp. 9352–9353.

105 Davis, *World Banking and Currency: A Review of Recent Developments,* p. 215.

and to discriminate against speculative and non-essential loans;
4) The rationing of credit;
5) The attempt to drive war paper from the portfolios of Reserve and member banks;
6) Controlling the issue of Federal Reserve notes;
7) The closer scrutiny of paper offered for discount;
8) Advances in the Bank rates.

The Issuance of Warnings. On June 20, 1919, the first of their warnings was issued by the Federal Reserve Board. In a letter addressed to the Chairman of each of the Reserve Banks, Governor Harding expressed himself as concerned over the existing tendency towards excessive speculation:

> The Federal Reserve Board is concerned over the existing tendency towards excessive speculation, and while ordinarily this could be corrected by an advance in discount rates at the Federal Reserve banks, it is not practicable to apply this check at this time because of Government financing. By far the larger part of the invested assets of Federal Reserve banks consists of paper secured by Government obligations, and the Board is anxious to get some information on which it can form an estimate as to the extent of member bank borrowings on Government collateral made for purposes other than for carrying customers who have purchased Liberty bonds on account, or other than for purely commercial purposes.
>
> The Board would appreciate your comments on this situation in your district.[106]

It was an open secret that a large part of the stock market speculation through 1919 had been financed with funds borrowed by member banks from the Reserve Banks with government securities as collateral. This practice was wholly contrary to the intent of the Act. A somewhat similar warning had been sounded in the *Federal Reserve Bulletin* for June 1919.[107] The advance of call rates in the early part of July to 12, 15 and even 17% prompted the Board to sound a third note of warning. In its statement issued on July 9 it declared that the flurries which had occurred in call money rates were regrettable but would continue so long as the present methods of financing and settling

[106] *The Commercial and Financial Chronicle*, June 14, 1919, p. 2390.
[107] PP. 523–524.

speculative transactions were persisted in. The Board went on to say that as conditions were then such flurries might be prevented only by methods adopted during the war (i. e., by a Money Committee) which would be undesirable to perpetuate in time of peace. The Board concluded with the observation that it was neither the function of the Treasury nor of the Reserve Banks to provide cheap money for stock speculation.[108] This statement made bankers wonder whether the Reserve System might endeavor to reconstitute the Money Committee. The Treasury Department, being thoroughly in sympathy with the Board's attempts to reduce speculation and to decrease the funds available for stock market operations, withdrew funds from depositary banks in order that they might have less to loan on the Exchange.[109] The continuance through the early Fall of the speculative movement and of the high call rates coupled with the credit demands of the crop-moving period and with demands for credit growing out of delays in transportation caused the Reserve officials great concern. In a letter addressed to Senator Owen,[110] Governor Harding explained that the high rates for call money continued to reflect unbridled stock market speculation and hinted that it might be necessary for the Reserve Banks to ration credit. The Board was firmly convinced, he stated, of the fact that the resources of the Reserve Banks had been drawn upon for stock market operations and that a greater percentage had been employed in this manner than in legitimate business.

Its proximity to the stock markets and the fact that its funds had been used in stock speculation naturally made the Federal Reserve Bank of New York more interested in speculative tendencies than were the others. On the 24th of October it addressed a questionnaire to the more important banks of New York City asking for such data as the amount of Liberty and Victory bonds which they had on hand, the amount held as collateral for loans and the rates charged for such loans and for renewals.[111] It was understood that the Bank planned to submit this data to the Board. Following the questionnaire the rates at the New York Bank were raised on the 3rd of November. The Board explained that the reason for the advance was evidence

108 *The Commercial and Financial Chronicle,* July 12, 1919, pp. 130–131.
109 Magee, *Call Rates and the Federal Reserve Board,* p. 61.
110 *The Commercial and Financial Chronicle,* Nov. 22, 1919, p. 1933.
111 *The Commercial and Financial Chronicle,* Oct. 25, 1919, p. 1565.

that the great volume of credit, created in response to the financial needs of the Government, when released was diverted to speculative employment.[112] In its *Report on Business Conditions* for November 20, 1919,[113] the New York Bank, in commenting upon the continued tendency toward inflation and speculation, warned member banks not to become steady rediscounters, explaining that the function of the Reserve Banks was not to supply them with funds at a profit. In its next issue the New York Bank reiterated these ideas and stated that the banking problems of the coming year would center largely around the expanded volume of bank credit left as a heritage of war financing, a volume much in excess of that required by production and distribution.[114]

Though the warnings of the Reserve System may have had some effect in that New York banks were induced to cut down the amount of their loans to brokers, on the whole they were futile in checking the rise in prices and in reducing the great bulk of speculative loans.[115] This the Board admits in its *Seventh Annual Report* in a statement that the warnings "were only a transitory expedient and were given only momentary attention by many banks."[116] The System resorted to these warnings as a means of controlling credit only because Government methods of financing would not permit the raising of the Bank rates, which the Board admitted was the most effective way of controlling credit.[117] The issuance of warnings as a means of controlling credit was especially doomed to failure in America, a nation with thousands of independent banks. So strong was the profit-making motive in the mind of the average American banker, so strong the compulsion to serve his customers however they might use his funds, so unwilling was he to see any

[112] *Report on Business Conditions,* Federal Reserve Bank of N. Y., Nov. 20, 1919, p. 1.

[113] P. 1.

[114] Issue of Dec. 20, 1919, p. 1.

[115] See Moulton, *Financial Organization of Society,* p. 635, and Miller, *Federal Reserve Policy,* p. 189.

As regards the efficacy of controlling credit by warnings, Governor Harding made the following statement before the Chamber of Commerce of Cleveland, Ohio, on September 16, 1920: "As I have already pointed out, a thorough test was made last year of the theory that the credit situation could be controlled without advancing discount rates, but it was found that control could not be affected by an appeal to reason alone." (*The Commercial and Financial Chronicle,* September 25, 1920, p. 1229.)

[116] P. 12.

[117] *The Commercial and Financial Chronicle,* June 14, 1919, p. 2390.

element of danger in the existing situation, that the action of the Board must necessarily be nullified. It was idle to preach against excessive borrowings and speculation and then to invite rediscounting by inordinately low rates.

Moral Pressure. In his testimony before the Joint Commission of Agricultural Inquiry, Governor Strong of the Federal Reserve Bank of New York described the means by which it had attempted to regulate credit through moral pressure. Though the volume of credit was regulated principally by the rate charged, he said:[118]

> The situation developed by the war, as well as the particular circumstances as to certain banks, have, and possibly always will necessitate, the officers of this bank making inquiry of banks which appear to be borrowing undue amounts, and, where justified, in restraining them from calling upon us too heavily. This we have always done since the borrowings of member banks have become so large. For the last two years or more regular meetings have been held at the bank, to which officers of member banks from all over the district are invited, when these matters are discussed and the views of the officers of the bank carefully explained.
>
> In addition to these regular meetings, the Federal reserve bank has a staff of employees whose sole duty it is to visit different member banks throughout the district in an effort to discuss and explain the scope and purpose of the various functions of the Federal reserve system. In the case of the banks in New York City, they are questioned personally, and it has frequently been thought advisable for reasons of general policy to ask them to reduce their aggregate borrowings. Action of that character by the officers of this bank, however, has never been regarded as bank supervision such as would relieve the Comptroller of the Currency of his responsibility for the condition of member banks, and has never been intended as a corrective influence over the management of the detailed operations of these banks. As the comptroller well knows, when it has been discovered either by us or by his examiners that banks have gotten into a dangerous condition, we have tried by every means in our power to correct the conditions, not by restricting credit that might force a bank failure, but by such loans as we believe necessary to save the bank from failure. In no case have we failed of doing so.

[118] *Hearing before the Joint Commission of Agricultural Inquiry*, Part 13, p. 244.

At the conference held on May 18, 1920, Mr. Scott of the Dallas Reserve Bank claimed that the rate increases had not been effective and that resort must be had to moral pressure.[119] The educational conferences held by the New York Bank undoubtedly were of great value in explaining the purpose of the Reserve Act to the member banks of the Second District. Sole reliance must, however, not be put on educational campaigns or moral pressure, for there will always be banks uninfluenced by such appeals. These should be supplemented by other measures such as rate control. In Germany the use of moral pressure in checking outflows of gold had considerable success by reason of the small number of banks and the power of the Reichsbank, supported as it was by the Imperial Government. In America the use of moral pressure is likely to have less influence excepting among the more enlightened bankers.

The Curtailment of Non-Essential Credits. Another method followed by the System in endeavoring to check the upward movement of prices was its admonitions addressed to the banks of the country to reduce their outstanding lines of credit and to discriminate against speculative and non-essential loans. Banks were exhorted to shoulder their responsibilities and to desist from activities which would intensify the upward movement. In its *Report on Business Conditions* for April 30, 1920, the New York Reserve Bank pointed out that banks were the most potent single influence in the industrial life of the country since they were in touch with every business activity. The existence of the Federal Reserve System, continued the *Report*, does not relieve a single banker, whether member or non-member, from his individual responsibility in checking further expansion by exercising a stricter control over extensions of loans. As regards what each banker might do in the present situation, the *Report* suggested that

1) no new loans be made which would not further production or distribution.
2) loans for speculation in commodities, real estate and securities be discouraged;
3) present plants be used to full capacity and not enlarged;
4) debtors pay their debts, which would inure to their own advantage in this period of high prices;
5) no constructions or improvements be made which are not absolutely essential.

[119] *Federal Reserve Board Conference*, p. 35.

The *Report* concluded with the statement that these suggestions were outlined with deflation as an objective and that each banker should take a firm and determined stand to inaugurate a gradual and orderly reduction of credit. As far back as December 1919, the monthly bulletin of the National City Bank [120] expressed the same thought and declared that the time had come for member banks to conduct their operations without resorting to the Reserve Banks, whose discount rates should be raised sufficiently high to discourage rediscounting.

The American banker had his responsibilities clearly outlined. The System was in favor of what might be termed "democratic" deflation. Deflation was to be initiated by the bankers and was not to be forced from above. Each banker was to map out his own plan for the curtailment of credits. He would decide which of the industries in his locality were essential and extend funds to them alone. Credit was to be conserved. Funds were not knowingly to be extended for speculative purposes. Deflation was to proceed in an orderly and gradual fashion. The difficulties which prevent bankers from imposing checks, particularly in a period when the business community is intoxicated with optimistic forecasts of future conditions, have been mentioned before. If he were to deny credit he would lose many valuable customers. He therefore shifts his responsibility. With the system of banking prevailing in America deflation can not be "democratic." It must be initiated from above.

In its suggestions to reduce loans for non-essential and speculative purposes, the Board assumed that speculation might be discouraged and the movement of speculative prices controlled without disturbing legitimate business. The Federal Advisory Council quite definitely stated that a substantial reduction in the volume of credit could be effected without injury to the legitimate industry of the country and without curtailing essential production. "Not only this but such reduction in volume of credit may be made to materially strengthen the credit fabric of the country as a whole." [121] In the fall of 1919 speculation and production were so inextricably bound up that it would have been impossible to have denied credit to the one without injuring the other. For instance, there had been considerable speculation in wool and great quantities were being hoarded. As a consequence the price of wool rose sharply which induced per-

[120] P. 8.

[121] *Seventh Annual Report of Federal Reserve Board*, p. 605.

sons engaged in the industry to increase their production and enter into commitments on the basis of the high prices prevailing at that time. Should the loans which had been granted the speculators be called, they would be forced to sell their stocks of wool with a resultant decline in price. The decline would necessarily react unfavorably upon those producers who had bought sheep and contracted for land on the basis of the high wool prices. In the latter part of 1919 it would have been impossible to have singled out the speculators and to have deflated them without having this policy react upon producers. At the beginning of the upward movement the Reserve Banks should have endeavored to prevent speculation from making headway by insisting that paper should be liquid and should grow out of actual commercial transactions. Once the upward movement has gained momentum and loans to speculators have assumed importance it becomes impossible to separate speculation and production.

Orderly Deflation. Through 1919 the Federal Reserve Board constantly stressed the fact that deflation must proceed in an orderly fashion. Presumably they meant that prices should decline gradually over a long period of time. In the two decades preceding the gold discoveries of 1896 there had been such a slow gradual decline of prices in America. The Board erred, however, in believing that a fall in prices following a cyclic upward movement might be gradual. By its very nature this is impossible. A crisis is always followed or accompanied by a rapid fall in prices. This was true in 1873, in 1893 and in 1907. The rapid upward movement of prices during 1919 had encouraged merchants to increase their inventories, and had resulted in widespread hoardings. The free flow of goods from producer to consumer was impeded. The beginning of a downward movement in prices would be the signal for a wholesale dumping of goods on the market. Business concerns would frantically endeavor to rid themselves of their inventories. Cyclic deflation can not be orderly, for what Hawtrey describes as the vicious circle of deflation sets in:[122]

> Deflation once started, prices once on the down grade, the holding of commodities in stock means an actual loss. The prospect of this loss has itself a deterrent effect upon traders, who make a practice of holding commodities with borrowed money, and rein-

[122] *Monetary Reconstruction*, p. 111.

forces the deterrent effect of the rate of discount. In the first instance the rise in discounts discourages dealers from buying and impels them to sell. But the result is so to depress markets that their efforts to sell are ineffectual. The unwillingness of the dealers to buy means fewer orders to producers; profits are smaller, less wages are earned, and thus the consumers' demand shrinks. The rush to sell in an unfavorable market forces down prices, and the fall of prices reinforces the original process. Therefore, once a high discount rate has become deterrent at all, it tends to grow more and more deterrent.

The Rationing of Credit. Through this period the idea that credit should be rationed in order to achieve deflation appealed to the imagination of many. Vissering defended this method of contraction before the International Financial Conference held in Brussels in 1920.[123] Presumably in inaugurating a policy of credit rationing, which presupposes that discount rates are to be kept low, a central bank would plan to discount only a certain amount of paper a month, and only paper offered by essential industries which were themselves in a highly liquid condition. In a very crude way the Atlanta Federal Reserve Bank endeavored to ration credit by refusing to discount paper arising from the sale of pleasure automobiles on the ground that the industry was, as demonstrated later, in an overextended condition.[124] Though the Atlanta Bank might have been quite justified in its efforts, the pressure brought to bear by automobile manufacturers was such as to compel the abandonment of this policy. At the conference held in Washington on May 18, 1920, and attended by members of the Federal Reserve Board, the Advisory Council, and the Class "A" Directors of the Reserve Banks, a suggestion was made by Mr. Perrin from the San Francisco Bank that the Reserve Banks should exhort every bank in the country to reduce its loans by 10% preparatory to the crop-moving demands of the Fall. The conference took no definite action on Mr. Perrin's suggestion for it was felt that there were radical differences in conditions between the Reserve districts.[125] His idea implied, of course, a form of credit rationing. The

[123] International Financial Conference. Brussels, 1920, *Proceedings of the Conference*, Volume II, pp. 62–63. For another discussion of the rationing of credit, see Willis, *The Control and Apportionment of Credit in the United States.*

[124] *The Commercial and Financial Chronicle*, May 22, 1920, p. 2142.

[125] *Federal Reserve Board Conference*, pp. 38, 39 and 43.

political and administrative difficulties standing in the way of inaugurating a policy of credit rationing by the Reserve Banks are almost insurmountable. Besides the difficulty of differentiating between speculation and legitimate business there is the added difficulty that the one may not be uprooted without injury being done to the other. The policy of credit rationing breaks down absolutely during a crisis [126] and even in ordinary times rate control is simpler and greatly to be preferred.

Driving War Paper from Bank Portfolios. Immediately following the armistice the Reserve Board requested the opinion of the Regional Banks as to the best method to be followed in getting the war paper out of the portfolios of the banks of the country and in generally restoring their liquidity.[127] Some of the methods suggested were that the Reserve Banks should charge a higher rate for renewals of paper secured by government obligations; that saving should be encouraged so that the securities might be absorbed; that Bank rates on war paper should be materially increased; that moral pressure should be brought to bear upon member banks to liquidate their holdings of government securities; and that bank investments in government securities should be discouraged. The campaign of the Reserve System met with considerable success. The loans collateralled by government obligations and the government securities owned by all the reporting member banks reached a peak in May 1920, and a year later had decreased by a billion and a half dollars. Their total loans and investments, however, did not decline proportionately but on the other hand increased by over $2,000,000,000. As the portfolios of member banks became rid of war paper the released funds should have been used to reduce their borrowings from the Reserve Banks. It was unfortunate that this did not occur and that trade and speculation not only absorbed the credit released from the financial requirements of the Government but required in addition the creation of much more. Such an outcome simply nullified the efforts of the Board to contract credit in this particular manner.

Controlling the Issuance of Federal Reserve Notes. Among the many methods suggested for the control of credit through this period were several which dealt with controlling the issuance of Federal Reserve notes. The suggestions made were: first, that the Board should impose interest charges upon Reserve

[126] See, pp. 13.

[127] See *Federal Reserve Bulletin*, 1919, pp. 325–329.

notes issued to Regional Banks amounting to 5% of the uncovered portion; second, that a so-called normal currency limit should be established for each member bank and that increased charges be imposed on notes in excess of this amount; third, that a limitation should be placed upon the total volume of Reserve notes issued by the Board, the maximum amount being allocated among the Regional Banks; fourth, that the character of paper acceptable as collateral by the Reserve agents against issues of Reserve notes should be limited by definition, i. e., that member banks' collateral notes and paper secured by government obligations be eliminated as collateral; fifth, that outgoing shipments of Federal Reserve notes should be made at the expense of the consignee.[128] The theory underlying all of these suggestions was that the imposition of restrictions upon Reserve notes would automatically check the growth of credit. This supposition was valid, for as we have seen deposit currency and money increase together and bear a more or less constant ratio to one another. Restrictions placed on the growth of one will necessarily prevent the expansion of the other.

The first suggestion is based upon the fact that the Act permits the Board to impose a tax determined by itself upon uncovered issues of Reserve notes. This provision was in all probability suggested by the act governing the operations of the Reichsbank. In the banking history of America few efforts have been made to limit note issues by the imposition of taxes. Provision was made in the charter of the Second Bank of the United States that the holders of its notes were to receive interest at the rate of 12% per annum in case the bank failed to redeem the notes in specie upon demand. The purpose of this was to maintain the notes, in case their redemption in specie should ever be denied, at a parity. An examination of the state-banking legislation passed prior to the creation of the national banking system will reveal that no effort was made to limit the volume of the outstanding state bank notes by means of the imposition of taxes. In the case of national banks a license fee or what might be termed a franchise tax was from the beginning levied upon the amount of bank notes outstanding, except upon those for whose retirement lawful money had been deposited with the Government. It was not the purpose of this tax, however, to limit the amount of

[128] *Seventh Annual Report of the Federal Reserve Board*, pp. 608–609. The fifth suggestion was also offered by Mr. Kennard of the Boston Reserve Bank at the conference on May 18, 1920 (p. 12). No action was taken by the conference on his suggestion.

national bank notes for they were already limited by the amount of government bonds bearing the circulation privilege. The Reserve Banks are not required by the Act to add the tax which might be levied by the Board upon the amount of Reserve notes uncovered by gold to their rates of discount. Conceivably they might absorb the whole tax themselves and their Bank rates be unaffected. Even though the tax were to be added to the Bank rates this would not be a desirable method of raising discount rates. If conditions are such that Bank rates must be raised the Reserve Banks themselves should take cognizance of this fact and raise rates of their own volition instead of throwing the entire responsibility for increases upon the Reserve Board.[129]

Suggestions two and three for controlling the issuance of Reserve notes are quite similar and may be discussed together. The imposition of arbitrary limits on currency issues is dangerous in that it is apt to render the currency system inelastic and incapable of responding to seasonal, cyclic and secular requirements. The inelasticity of the Bank of England note has on four occasions forced the suspension of the Peel Act, while the limits imposed upon the notes issued by the Bank of France and the Reichsbank have had to be raised from time to time to satisfy secular requirements.

Forcing the consignee to pay the expense of shipping Reserve notes from the Reserve Banks, the fifth suggestion, would have little or no effect on the contraction of credit, for the expense is negligible.

The fourth suggestion seems eminently sound. Reserve notes should not be issued against paper secured by government obligations. Their sole base should be paper arising from actual commercial transactions, paper which fluctuates with business needs. Before the war the Reichsbank, it will be remembered, could not issue notes against Lombard loans. Allowing the issuance of Federal Reserve notes against paper secured by government bonds has made them akin to the notes of national banks. Ideally the notes of central banks, the expansive part of any currency system, should be based solely on and should be limited by commercial paper, which fluctuates with business requirements.

The Closer Scrutiny of Paper Offered for Discount. Still another method suggested to check the upward movement was

[129] The Federal Advisory Council opposed the levying of taxes upon issues of Reserve notes. *Eighth Annual Report of the Federal Reserve Board*, p. 681.

that all paper offered for discount should be subjected to a closer scrutiny. Paper which is technically eligible for discount may not be "good" in the sense that the names appearing thereon are not in a highly liquid condition. The Reserve Banks should make a close study of financial statements whenever handed in with paper offered for discount and should insist that the current ratio, the ratio of debt to net worth, of sales to receivables, and of sales to merchandise be satisfactory.[130] This would not only presuppose a close study of the balance sheet of the firm in question but of the balance sheets of other firms in the same line and would require the construction of "barometrics" by the Reserve Banks. The credit departments of the Reserve Banks are in a position to render in this way a very distinct service. Up to the present time they have failed to take full advantage of their opportunities. Professor Sprague has made the very ingenious suggestion that the amplitude in the business cycle might be greatly reduced were banks to insist upon a rising current ratio during the upward sweep. The Reserve Banks receiving paper from banks in all parts of the country and paper arising from varied lines of industry are in a logical position to know what the normal current ratio for any one industry should be and to insist upon its increase during the upward sweep of the cycle.

Advances in the Bank Rate.[131] Many of the officials connected with the Reserve System were anxious to raise rates of discount immediately after the armistice. In testifying before the Joint Commission of Agricultural Inquiry, Governor Strong of the Federal Reserve Bank of New York said that he himself had favored this:

> I believe, if it had been possible, it would have been desirable for the Federal reserve system to have advanced its rates at some point in the period between January and March, 1919, which you will recall I described as the period of decline in prices which occurred after the turn of the year after the armistice—you will notice on the chart, that price declines are common in all four countries, Italy, France, England, and the United States, although less pronounced in the United States, probably, than in any other.
>
> At that time, when these questions of policy were being discussed, the Treasury was faced with a situation which seemed to us to be controlling. That is to say, it had a very large loan to face;

130 See Wall, *Analytical Credits,* Chaps. VII–XII.

131 A table giving the changes in rates of discount at the New York Federal Reserve Bank may be found on p. 323.

> the largest that had yet been asked from the country, as then estimated. In the spring of 1919 it appeared that the amount of the Victory loan might be $6,000,000,000. And not only that, but the post war expenditures of this great war machine that had been set up by the Government made its expenditures still in excess of its revenues. In other words, the volume of Government borrowing was increasing.[132]

The Federal Reserve Bulletin for December 1918, described the post-war problem as one of preventing credit from expanding too far and of reducing so far as practicable any excess then existing.[133] The *Bulletin* continued:

> With the return of peace, the close of the period of urgent Government financing through the sale of long or short term obligations comes in sight, and the resumption of their function as a regulator of credit becomes a duty for Federal Reserve Banks.

The *Bulletin* recommended as a program of financial reconstruction that the loans on war paper be reduced, that government bonds be absorbed by the public through savings, that portfolios of banks be made more liquid, that loans for non-essential industries be curtailed and that members of the Reserve System desist from rediscounting steadily.

Obstacles in Way of Raising Discount Rates. The hope expressed by the Board that it might soon regulate and control credit through the discount rate and that member banks might cease rediscounting steadily was not realized. The financial necessities of the Government and the methods utilized by the Treasury in floating its obligations prevented the Reserve System from raising its rates. In the *Bulletin* for June 1919,[134] it is explained that the failure to check speculation by advancing discount rates was due to the necessity of promoting the absorption of government securities. It will be remembered that the Reserve Banks had agreed, as a means of facilitating the flotation of the Victory loan, to carry the commercial banks of the

[132] Part 13, pp. 763–764. See, also, Forgan, *Currency Expansion and Contraction,* p. 170. Through this period the New York Bank took the position that increases in rates had to be the main reliance for bringing about deflation, *Federal Reserve Board Conference,* May 18, 1920, p. 46.

[133] P. 1164.

[134] P. 524.

country for six months at rates equal to those borne by the notes. Another factor standing in the way of advancing the discount rates, which seemed quite an obstacle to the Treasury Department, was the deposit rate agreement reached between several of the Reserve Banks and the clearing house banks located in the financial centers.

The Deposit Rate Agreement. Early in 1918 some of the larger banks throughout the country began to compete sharply with one another for bankers' balances offering inducements in the form of increased rates of interest.[135] On the 26th of February Governor Harding issued a statement deprecating this practice and explaining that in diverting funds from the interior it tended to interfere with government financing.[136] As a result of his apprehensions the clearing house banks in New York agreed to fix a minimum rate of 2¼% on bankers' balances payable on demand which would be increased by ¼ of 1% for every advance of ½ of 1% in the Bank rate on ninety-day commercial paper. In any event the deposit allowance rate was not to exceed 3%.[137] As this agreement continued after the armistice, the Board feared through 1919 that an advance in the ninety-day rate at the New York Reserve Bank might lead to a scramble for deposits and disturb the whole banking situation.[138] Toward the end of 1919 the Board had become convinced of the necessity of raising the Bank rate and of modifying the agreement. Accordingly it invited clearing-house associations to send representatives to attend a conference to be held in Washington on the 6th of January 1920. The consensus of opinion at this conference was that the existing agreement was not satisfactory and that the Reserve Banks should be free to establish their rates of discount without reference to the interest paid on bankers' balances.[139] At a second conference held in Chicago on January 23, the resolution was adopted that the present agreement be abrogated and that banks and trust companies in the various reserve districts pay no more than 2¼% on the net and available daily balances of banks and trust companies.[140] On the date of the abrogation of this agreement the

[135] *Federal Reserve Bulletin,* 1920, p. 3.

[136] *Ibid.,* 1918, p. 160.

[137] *Ibid.,* 1920, p. 3, and Norton, *Bank Rate in the United States,* p. 480. In July the Chicago Clearing House banks adopted the same agreement.

[138] *Sixth Annual Report of the Federal Reserve Board,* p. 4.

[139] *Federal Reserve Bulletin,* 1920, p. 157.

[140] *Ibid.*

rate on ninety-day commercial paper at the Federal Reserve Bank of New York which had stood at 4¾% since April 6, 1918, was advanced to 6%.

Another obstacle preventing the Reserve Banks from increasing their rates through this period was the fear on the part of the Treasury that a policy of deflation would bring in its wake a period of depression, unemployment, and radicalism, and would impede the rapid re-absorption of soldiers into industrial life. The price theories held by the Board and its skepticism of the efficacy of the Bank rate might also in some measure account for the delay in advancing the rates. These obstacles were not insurmountable. Far better it would have been for the Treasury to have altered its method of selling its obligations and for the deposit allowance agreement to have been abrogated immediately following the armistice than for the Bank rates to have been held to artificially low levels.

Through November and December, 1919, all rates of discount at the Federal Reserve Bank of New York except those on agricultural paper and on ninety-day commercial paper were advanced. This action which was really a turning point in the policy of the System was foreshadowed in the *Bulletin* for October and November. In the *Bulletin* for October [141] the Board reviewed its war-time discount policy and set forth some of the difficulties standing in the way of an effective control of credit. It stated:

> The disappearance of the Treasury from the long-term loan market and the rapid reduction of its requirements for short-term accommodation foreshadows the approach of the time when financial operations of the Government will cease to be the important factor in shaping Reserve Bank policies which they have been, and Federal Reserve Bank rates once more will be fixed solely "with a view of aiding commerce and business."

In the November *Bulletin* the Board said: [142]

> A review of all the conditions in the banking situation has confirmed the Board in the view that in the application of its discount policy an advance of rates should no longer be deferred.

In pursuance of these policies advances were made in the rates of discount. Few believed that the slight increases which had

[141] P. 910.
[142] P. 1011.

been made were final. It was recognized that others must follow subsequently.

In January 1920, the System was finally freed from Treasury domination and the deposit rate agreement with the result that on the 23rd of the month further increases were made. These, the Board stated, were an effort to restrict the rapid growth in credit which had not declined as it should with the passage of the holiday trade.[143] Rediscounts continued to grow and market rates continued upward which forced another advance in the Bank rates the first of June. In reading through the *Bulletin* we find that the objects the Board desired to attain by raising the Bank rates were several. The advances in the discount rate, it is stated, were intended to restrict the rapid growth of credit, to regulate and govern the flow of credit with careful regard to the economic welfare of the country, and to restrict the speculative use of credit.[144] In the June 1920 *Bulletin* the Board expressed the wish that credit expansions might be checked without curtailing essential production, an impossibility as we have explained. In another issue the Board declared that the Bank rate should be sufficiently high to eliminate the profitableness of rediscounting by the member banks.

The Phelan Act. Before 1913 national banks were not allowed to rediscount to an amount greater than their own capital. At the time of the passage of the Reserve Act this earlier provision was altered and an exception made in the case of the indebtedness of national banks to Reserve Banks. The result was that no limit was imposed on the amount of member bank borrowings from the Reserve Banks. During 1919 a few member banks began to borrow from Reserve Banks [145] on such a scale that the

[143] *Federal Reserve Bulletin*, 1920, p. 118.

"With the year 1920 the federal reserve banks entered upon the exercise of their function of regulating credit in accordance with business and economic conditions, and, under circumstances of extraordinary difficulty and for the first time since the outbreak of the war undertook to develop a policy of credit control by means of discount rates." At the same time the Treasury Department adopted the policy of adjusting interest rates on certificates of indebtedness to conditions in the money market. Miller, *Federal Reserve Policy*, p. 190.

[144] *Federal Reserve Bulletin*, 1919, pp. 910–911, 1010–1011; 1920, pp. 223, 456, 582–583.

A number of conferences attended by officials of the Reserve System were held during 1920 on April 7–10, May 8 and 18, to discuss means of regulating and controlling credit.

[145] In January, 1920, fourteen banks in Kansas City had absorbed 34 per cent of the normal lending power of the Federal reserve bank and nine Omaha banks had absorbed 23.5 per cent. Therefore, these two cities alone had

resources of the Reserve Banks would not have been sufficient to cope with the demand had all member banks borrowed proportionately.[146] The excessive borrowings by a few banks was really in violation of the spirit of Section 4 of the Act which directed the Board of Directors of each Reserve Bank to administer its affairs fairly and impartially and without discrimination in favor of or against any of the member banks, and to extend to each of the members such discounts, advancements and accommodations as might safely and reasonably be made with due regard to the claims of the other members. As a corrective for this condition the Board recommended the passage of what later came to be known as the Phelan Act. This Act, which was simply an amendment to subdivision d, Section 14, permitted the Reserve Banks, with the approval of the Board:

1) To determine the normal maximum rediscount line of each member bank, and
2) To fix graduated rates on an ascending scale applicable equally and ratably to all member banks rediscounting on a scale in excess of the normal line.

absorbed 57 per cent of the normal lending power of the Kansas City Federal Reserve Bank. There was a slight recession in the borrowings of these banks due to temporary seasonal deflation, in the early part of 1920, but by April, 1920, the fourteen Kansas City banks were absorbing 50 per cent of the normal lending power of the Kansas City Federal Reserve Bank and nine Omaha banks were absorbing 23 per cent, representing a total of 73 per cent of the normal lending power of the Kansas City Federal Reserve Bank, and leaving 27 per cent of the normal lending power available for the 1,063 other member banks in the Kansas City district.

In the period from April 19, 1920, to December 31, 1920, banks which had not been previously borrowing increased their borrowings to 12 per cent of the normal lending power of the Kansas City Federal Reserve Bank. During the same period the number of banks borrowing in the Kansas City Federal reserve district increased from 178, or 16.8 per cent of all the bank, to 416, or 38.3 per cent of all the banks. In the same period, the amount borrowed by all borrowing banks increased from $106,851,047 to $117,328,475. While banks not borrowing previously to April 19, 1920, when the progressive rate became effective, were increasing their borrowings, the borrowings of the fourteen Kansas City member banks paying the progressive rate decreased to 36 per cent of the normal lending power of the Kansas City Federal Reserve Bank, and the borrowings of the nine Omaha member banks paying the progressive rate decreased to 13 per cent of the normal lending power of the Kansas City Federal Reserve Bank. *Interest Charges of Federal Reserve Banks,* pp. 8–9

[146] For a discussion of the need of the Phelan Act see *Sixth Annual Report of the Federal Reserve Board,* pp. 70–71, and *Interest Charges of Federal Reserve Banks.*

The passage of this amendment would, in the opinion of the Board, reduce the accommodation to those member banks which had borrowed excessively and would reduce these borrowings without raising the basic rate. The Banks would thus be provided with an effective method of dealing with expansions of credit and might, as it was claimed, the more effectively realize the Board's ambition to prevent further expansions of credit.

Congress evidenced scant interest in the Phelan Act. Considering the importance of the measure, it passed both Houses with little discussion. There was practically no opposition. The House Committee on Banking and Currency urged the adoption of the amendment and explained its necessity in the following report:[147]

> The board has undertaken to check the expansion of credit which has taken place during and since the war by raising its discount rates, but in the present abnormal conditions this uniform increase of rates does not fully control the situation. A high discount rate has a restraining influence on the member banks and on their customers, but most of the rediscounting, as a matter of fact, is done by a comparatively few banks in each district. Before the passage of the Federal reserve act no national bank could incur indebtedness beyond the amount of its capital stock for rediscounts, but the act contained an amendment to section 5202, Revised Statutes, making an exception of "liabilities incurred under the provisions of the Federal reserve act."
>
> Thus, the limit was removed and rediscounts to any amount may be lawfully made with Federal reserve banks. Some banks have rediscounted several times their capital and surplus, and it is obvious that there should be a method of checking them short of actually refusing them further extensions and without increasing too much the rate applicable to all member banks. This bill will give each Federal reserve bank authority to make uniform rules determining for each member bank a normal maximum rediscount line based upon some such standard as its legal reserve, or possibly upon capital and surplus, with graduated rates on an ascending scale to apply equally and ratably to all of its member banks rediscounting amounts in excess of the normal line.
>
> For instance, if a bank's normal line of rediscounts were a million dollars, the rate might be raised one-half per cent on each $250,000 asked for above that amount. In this way the abnormal redis-

[147] *To Amend the Federal Reserve Act,* House of Representatives Report No. 678, 66th Congress, 2nd Session.

> counting of a comparatively few banks can be checked, without at the same time raising rates on all rediscounts to a figure that would be unjust to banks which had not even rediscounted up to their normal line and without seriously hampering business.

Among the arguments advanced in the House against the Phelan Act were that it would enable the Reserve Banks to play favorites among member banks [148] and to stifle business by curtailing credit in certain sections of the country,[149] that it would force member banks to liquidate at a loss their holdings of Government obligations,[150] that it would bring politics into the decisions of the Reserve officials,[151] that it would injure legitimate business and assist speculation, since speculators could pay any rate of interest.[152] Mr. Husted thought that the normal maximum rediscount line allowed each member bank should be fixed in the bill itself.[153] Mr. King stated that he had lost confidence in the Federal Reserve Board ever since they had urged the adoption of the Edge Act which was a species of deceit on their part to build up industries in foreign nations to the detriment of the American workingman and he claimed that the only motive the Board had in suggesting the amendment was to enable it to lay the blame on Congress for not passing "this alleged enabling law in time to avoid a crash if any." [154] If Mr. Wingo had his way, he said, he would report out a bill allowing no bank a line of credit from its Reserve Bank in an amount exceeding its capital and surplus.[155] In favor of the bill Mr. Mann suggested that it would keep down interest rates on certain credits rather than raising them all. Mr. Platt argued that it was necessary in order to enable the Board to curtail credit without hurting legitimate business and to prevent certain banks from using the resources of the Reserve Banks to the exclusion of others. [156] The bill passed the House Committee of the Whole on the 31st of March with sixty-eight ayes and eight noes.[157] The size of the vote is itself evidence of the lack of interest in the bill. On the whole the debate in the

[148] *Congressional Record,* Vol. 59, p. 5057.
[149] *Ibid.*
[150] *Ibid.,* p. 5060.
[151] *Ibid.,* p. 5067.
[152] *Ibid.,* p. 5065.
[153] *Ibid.,* p. 5063.
[154] *Ibid.,* p. 5062.
[155] *Ibid.,* p. 5069.
[156] *Ibid.,* pp. 5056–5058 and 5069.
[157] *Ibid.,* p. 5070.

House was quite puerile and centered about inconsequential points. The problem of whether low bank rates plus graduated rates was a better method of inducing deflation than high bank rates was wholly ignored, as was the entire question of whether or not other methods than the use of the Bank rate might be more efficacious in checking the upward rise in prices. The discussion in the Senate occupies a little more than two pages in the *Congressional Record*. Only two Senators opposed the bill. Senator Gronna opposed it on the ground that it would hurt producers [158] and Senator Smith of South Carolina on the ground that it placed too much power in the hands of the Board.[159] In the course of his remarks Senator Smith decried the statements that there had been any inflation, stating:

> So long as there is the wealth of the country for the issuance of our time paper—thirty, sixty, ninety-day or six months' paper—it is wholesome that we have what seems to be an inflation of the currency, but which on analysis is nothing more or less than clearing-house certificates based upon the actual wealth of the country and secured by a percentage of the gold reserve.[160]

The Senators passed the bill on the 3rd of April and it was approved on the 13th by the President.

The provisions of the Phelan Act were permissive. It was not required that each Reserve Bank establish a basic line and graduated rates of discount. In fact, progressive rate schedules were adopted by only four Reserve Banks, Atlanta, St. Louis, Kansas City and Dallas, all of them in districts where agriculture is of considerable importance. It is hard to understand why the Act was not put into operation in the other Reserve Districts. Even though the application of the Act was not as imperative in the eastern as in the western Reserve Districts, nevertheless had the progressive rates been established generally the agriculturalists could not have raised the cry, as later they did, that they had been unfairly treated. For some reason or other the eastern districts reached the conclusion that the bill was not applicable, though the peculiar conditions which made it inapplicable were not explained.[161] In his testimony before the Joint Commission

158 *Congressional Record,* Vol. 59, p. 5160.
159 *Ibid.*, p. 5161.
160 *Ibid.*, p. 5160.
161 *Hearing before the Joint Commission of Agricultural Inquiry,* Part 13, p. 691.

of Agricultural Inquiry, Governor Strong of the New York Bank cast doubts upon the theoretical soundness of progressive rates, declaring that a purely mathematical method of credit control might operate very unjustly, that it might have the effect of causing a number of banks to decline to extend credit, and that it would penalize the banks which had the courage to make extensions of credit in times of emergency.[162]

Methods of applying the progressive rates of discount varied among those four districts which took advantage of the Act. Full details of the application of the progressive rates in these districts are given below:[163]

Atlanta

Date effective.—May 31, 1920.

Basic line.—Sixty-five per cent of reserve balance plus paid-in subscription to capital stock of Federal Reserve Bank (average for previous reserve computation period—weekly for reserve city banks and semimonthly for country banks) multiplied by 2½.

When applied.—Normal rate at time of discount. Superrate applied at end of reserve computation period to average borrowings in excess of basic line.

Scale of Rates.—Superrate of ½% for first 25% or fraction thereof by which borrowings exceed basic line, 1% for second 25% excess, etc.

Exceptions.—Member bank collateral notes secured by Liberty bonds or Victory notes actually owned by the borrowing bank on April 1, 1920, or by Treasury certificates actually owned were subject only to normal discount rates, but were considered a part of the total borrowings or "credit structure" in determining the progressive rate applicable to other eligible paper.

Rebates on paper paid before maturity.—At normal rate.

Modifications.—On June 14, 1920, after approval by the Federal Reserve Board, paper drawn for strictly agricultural production up to 100% of the member bank's capital and surplus was excepted from application of progressive rates.

On June 23, 1921, Federal Reserve Board approved recommendation that all charges previously made in excess of 12%, including the normal rate, be rebated.

Date discontinued.—November 1, 1920.

[162] *Hearing before the Joint Commission of Agricultural Inquiry*, Part 13, p. 696.

[163] *Discount Rates of the Federal Reserve Banks*, 1914–1921, pp. 31–33.

St. Louis

Date effective.—May 26, 1920.

Basic line.—Same as Atlanta, except that reserve balances required during reserve computation periods covered by borrowings were used in determining the basic line.

When applied.—Same as Atlanta.

Scale of rates.—Same as Atlanta.

Exceptions.—Member bank collateral notes secured by Liberty bonds or Victory notes actually owned by the borrowing bank on April 1, 1920, or by Treasury certificates actually owned were not considered part of the total borrowings or "credit structure," nor did progressive rates apply thereto.

Rebates on Paper paid before maturity.—At normal rate.

Modifications.—On May 21, 1921, progressive rate plan was modified to provide a rate of 1% in excess of the normal rate of 6% on all borrowings in excess of the basic discount line, subject to exemptions previously in effect.

Date discontinued.—June 23, 1921.

Kansas City [164]

Date effective.—April 19, 1920.

Basic line.—Same as Atlanta, except that the reserve balance used in determining the basic line was the average maintained during the reserve computation periods ending within the preceding month.

When applied.—At time of discount, subject to adjustments to compensate reductions in borrowings and increased or decreased basic line determined from month to month by the formula outlined above.

Scale of rates.—Same as Atlanta.

Exceptions.—Member banks' collateral notes, secured by Treasury certificates of indebtedness, Liberty bonds, or Victory notes owned by the borrowing member bank on April 1, 1920, were exempted from the application of superrates but were considered part of the "credit structure" or total borrowings in fixing the rates applicable to other paper; while all rediscounts secured by government war obligations, as well as member banks' collateral notes not described above, were subject to the application of the superrates as well as being considered part of the "credit structure."

Rebates on paper paid before maturity.—At rate charged.

[164] The basic rate plan adopted by Kansas City was that suggested by The Federal Reserve Board, *Hearing before the Joint Commission of Agricultural Inquiry*, Vol. 3, p. 753.

Modifications.—On April 27, 1920, modified the progressive rate plan by excluding member banks' collateral notes secured by Liberty bonds or Victory notes actually owned on April 1, 1920, or by Treasury certificates of indebtedness actually owned altogether from the application of progressive rates, i. e., they were not only not subject to progressive discount rates, but were not to be taken into consideration in determining the progressive rates applicable to other eligible paper; while rediscounts secured by government war obligations, though no longer subject to the application of superrates were still considered part of the "credit structure" or aggregate indebtedness in determining superrates applicable to other eligible paper.

On January 29, 1921, established a maximum rate, including the normal rate, of 12%.

On July 1, 1921, established a maximum rate of 8%, including the normal rate of 6%, and at the same time changed the scale of progression to 1% for the first 100% of borrowings in excess of the basic line and to 2% on any further borrowings. Beginning July 1 member bank collateral notes secured by government war obligations, while subject only to normal discount rates, were again considered a part of the "credit structure" for the purpose of determining the progressive rate applicable to other eligible paper.

On August 3, 1921, the Federal Reserve Board approved recommendation that all charges previously made in excess of 12% including the normal rate be rebated.

Date discontinued.—August 1, 1921.

Dallas

Date effective.—May 21, 1920.

Basic line.—Paid-up and unimpaired capital and surplus of borrowing bank.

When applied.—At time of discount.

Scale of rates.—Same as Atlanta.

Exceptions.—Same as St. Louis.

Rebates on paper paid before maturity.—At current discount rates.

Modifications.—On July 7, 1920, discontinued application of progressive rates to current offerings and thereafter based them upon average excess borrowings within a reserve computation period. At this time all charges previously made were rebated and in lieu thereof new charges were imposed in accordance with the modified scheme.

Date discontinued.—February 15, 1921.

As explained above the basic line of the Atlanta, St. Louis and Kansas City Reserve Banks was, with minor differences between the methods of computation, the theoretical amount that they could extend each member bank based upon the member bank's contribution to the lending power of the Federal Reserve Bank and upon the Federal Reserve Bank's ability to place issues of Federal Reserve notes while maintaining a minimum reserve of 40% against notes and 35% against reserve deposits.[165] For example, let us assume that Bank "A" located in a reserve city has a capital and surplus of $1,000,000 and demand deposits of $10,000,000.

The stock holdings of that bank in its Reserve Bank would be $30,000—3% of its capital and surplus.

It would be required to keep on deposit with the Reserve Bank $1,000,000—10% of $10,000,000.

Against the reserve deposits the Federal Reserve Bank must maintain a reserve of 35% or $350,000.

Subtracting $350,000, the reserve which the Reserve Bank is forced to maintain, from the reserve deposits amounting to $1,000,000 we obtain $650,000.

To compute the basic line, this amount, $650,000, was added to the stock holdings of the bank, $30,000, which amounted to $680,000, which was then multiplied by 2½, getting $1,700,000, which would be that member bank's normal basic line. The multiplier, 2½, is chosen because a reserve of 40% is required against Reserve notes and this represents the expansion possible through Reserve notes.

Let us also assume that the total borrowings of this bank from its Reserve Bank during the course of a certain month amounted to $3,000,000, of which $500,000 was secured by government obligations. Its excess borrowings subject to the progressive rates would amount to $800,000 as indicated by the following table:

Average of borrowings during month		$3,000,000
Deduct:		
Basic line	$1,700,000	
Paper secured by Gov't obligations	500,000	2,200,000
Excess borrowings subject to progressive rates		$800,000

[165] See *Hearing before the Joint Commission of Agricultural Inquiry*, p. 284.

In addition to the basic rate, progressive rates increasing at the rate of 1% for each $425,000—25% of basic line—would be assessed against the excess borrowings.

The method followed by these three banks in obtaining the basic line, if anything, was much too liberal; while the method followed by the Dallas Reserve Bank might have worked hardship on certain institutions. A somewhat more liberal method than that followed by Dallas, and less conducive to overexpansion and simpler than that followed by the others, would have been to define the basic line as simply equal to the member bank's holdings of Reserve Bank stock plus its required reserve. If this method had been adopted the basic line of Bank "A" would have been equal to $1,030,000, its contribution to the resources of the Reserve Bank, which would have been larger by $30,000 than the basic line as computed by Dallas and smaller by $670,000 than the basic line as computed by the others. In exempting government obligations from the application of the progressive rates the Reserve Banks followed the policy instituted at the outbreak of the war of discriminating against commercial paper.[166] Borrowings from the Reserve Banks secured by government obligations should have been subjected to higher rates than the rates applicable to discounts of commercial paper, for through this period banks secured much of their moneys for speculative enterprises from the Reserve Banks by offering their notes collateralled by government obligation. Exempting war paper from the progressive rates, indeed, helped to nullify one of the intentions of the sponsors of the Phelan Act, i. e., the reduction of speculative loans. In exempting agricultural paper the Atlanta Bank catered to the agricultural interests who from the beginning have been accorded liberal treatment by the Reserve System.

At the time the progressive rates went into effect the discount rate prevailing on commercial and industrial paper maturing within ninety days ruled at 6% at the Federal Reserve Banks of Atlanta, Dallas, Kansas City and St. Louis, the Banks where the progressive rates were applied. During June rates on similar types of paper were raised to 7% at the Boston, New York, Chicago and Minneapolis Banks, while at the Federal Reserve Banks of Philadelphia, Cleveland, Richmond, and San Francisco,

[166] Mr. A. C. Miller, a member of the Federal Reserve Board, felt that the progressive rates should apply to government obligations. *Hearing before the Joint Commission on Agricultural Inquiry*, Part 13, p. 173.

progressive rates were not instituted and yet a 6% rate prevailed for ninety-day commercial paper. Later in the year (on November 1) the Atlanta Bank gave up its progressive rate and adopted a flat 7% rate for ninety-day commercial paper.

Discrepancies in Discount Rates. Again we must call attention to the discrepancies existing in the discount policies of the Reserve Banks. We are at a loss to account for the 7% rate prevailing in Boston while a 6% rate prevailed in Philadelphia, for in studying the movement of the reserve ratios of these two banks through 1920 we find that the reserve ratio in Boston ruled higher than that in Philadelphia. Only on three occasions did the adjusted reserve ratio at Boston fall below 40% while in Philadelphia it fell below twenty-one times. Then again, why should Richmond have had a 6% rate, which was not graduated, when its adjusted reserve percentage fell below 40% on forty-one occasions through 1920, while in San Francisco, with the same discount rate, it fell below but once? Should not discount rates in Philadelphia have equalled those in Boston, and discount rates in Richmond have ruled higher than those in San Francisco? If the adoption of the progressive rates were justified in four districts, is it not probable that their introduction would have been justified in the other eight where conditions must have been somewhat similar? Governor Strong states that they were not applicable to the New York district and yet fails to indictate the special conditions in that district which would make their introduction undesirable. From all points of view, political and economic, it would have been the better policy either to have introduced progressive rates throughout the entire System or to have rejected them in every district. If their general introduction had been agreed upon it would have been simpler and would have caused less friction to have computed the basic rate similarly for all districts.

Conclusion. Our survey of the methods employed by the Board to contract credits in the post-armistice period has come to an end. In attempting to exercise control over credit the System was greatly handicapped by Treasury policies. By reason of this it had to resort to other expedients and methods of control which, as we have discovered, were none too effective. Not until in January of 1920 did the Banks resume control of their rates, when the Treasury rather reluctantly decided to float its obligations at current rates of interest.

It is an anomaly that the members of the Federal Reserve Board, themselves in favor of a policy of deflation, were unable to raise rates of discount during the post-armistice rise in prices. The Bank rates should have been raised immediately following the termination of hostilities when the business community was expecting a recession in business.[167] Had this been done, had the Government sold its obligations at current rates of interest, begun to dispose of its surplus stock of war goods, and adopted a budget system, the return to a normal condition in business would have been less painful than it was a year later when prices had advanced by forty-seven points. Not only was this course not followed but the methods used in financing the needs of our Government and of our export trade led to the creation of vast quantities of credit offset by no compensating increase in saving. With the growth in purchasing power, it was inevitable that prices should skyrocket upwards. As Frank Vanderlip has expressed it:

> The almost exclusive cause of this [the rise of prices] has been the increase in the buying power caused by the creation of banking credit without any corresponding increase in the supply of goods to be purchased. . . . We are having an example of politics in banking, the results of which have been an unnecessary, undesirable and absolutely dangerous expansion of bank credits and a consequent increase of prices, to which may be traced the true cause of all social unrest and industrial disturbance. The belated increase in the Federal Reserve discount rate and unscientific preference given to Government obligations has now proven inefficient in halting further expansion. Each week has shown a decrease in the Federal Reserve bank's ratio of reserve to deposits. The situation calls for more vigorous action if inflation is to be halted and the remedy lies in the hands of the Federal Reserve Board.[168]

[167] "The Reserve Board, while urging repeatedly these ineffective remedies, has not seen fit to make use of the potent instrument for checking credit expansion which it alone can employ. Discount rates at central banks higher than the minimum rates charged by other banks is the most fundamental of the principles which should govern the policy of these institutions. During the war, it was perhaps proper to establish rates at or below those of the other banks. To maintain such rates for a year after the cessation of hostilities, while further credit expansion was taking place, was a course contrary to all of the teachings of financial experience." Sprague, *The Significance of the Weekly Statements of the N. Y. Clearing House Banks and of the Federal Reserve Banks,* p. 3.

[168] Vanderlip, *Responsibility of Federal Reserve System for Inflation and High Prices,* Trust Companies, February 1920, p. 141.

The Board's explanations of this rise in prices are pitifully weak. When first the price question was discussed in the *Bulletin* they apparently adhered to the explanation that the rise was due to changes on the monetary side of the equation of exchange. Gradually they changed their point of view until they began offering such reasons as a decline in production, an increase in demand and a growth in the inefficiency of labor. The inconsistency of their statements and their unwillingness to recognize the real reasons for the depreciation of the dollar reflect seriously upon the attitude of the members of the Board who should be motivated in their pronouncements by scientific considerations alone. Influenced perhaps by the attitude of the Board, the Secretary of the Treasury, in his annual report for 1919,[169] offered as a reason for the prevalent high prices the demand of the European belligerents as if that were explanation and justification. Demand, however, can not by itself alter the general price level which changes only in response to alterations in the volume of purchasing power. Through this period America was suffering from the curse of too much and too easy credit [170] just as Germany has been suffering since the armistice from a redundancy in her purchasing power media.

The year 1919 was mainly characterized by trading and speculation, speculation in securities, commodities and farm lands, and not by an increase in production or by any real prosperity. As Professor Mitchell puts it: "Such prosperity as we have had in 1919 has been business prosperity, not industrial prosperity. It represents high profits brought by active trading at rising prices, not by active production of useful goods. From the viewpoint of the national welfare it is an illusion produced by multiplying the values of most commodities by two and a fraction." [171]

Even granting that it was not possible for the Board to have raised their rates through 1919, in January of 1920, when they were released from Treasury denomination, their rates should have been advanced immediately to levels equal to or slightly above market rates. During that month it will be remembered that the rate on ninety-day paper at the Federal Reserve Bank of New York was raised to only 6%, and the 7% rate did not become effective until the 1st of June. Perhaps the System, cling-

169 p. 19.

170 See testimony of Professor Fisher, *Stabilization of Purchasing Power of Money*, p. 9.

171 *Prices and Business in the Near Future*, p. 4.

ing to the idea that deflation might take place gradually, hesitated to raise rates suddenly fearing that this might precipitate a rapid and disastrous fall in prices. As we indicated before, a cyclic fall in prices once under way always proceeds rapidly. There can be no such thing as a gradual cyclic deflation. The Bank rate on ninety-day paper should have been raised in January to 7%. It is not unusual for central banks to raise their rates sharply. The rate at the Bank of England rose from 3% on July 29 to 10% on August 1, 1914. Furthermore, had Bank rates been raised sharply in America, had deflation set in at that time, the farmers could not have complained as they did later that the rise was deferred until they had planted their crops.

The System did well in abolishing preferential rates on trade acceptances. These should not be reëstablished until the quality of the trade acceptance in America has vastly improved. Abolishing the preferential rates on war paper on December 30, 1919, was an excellent step. Why they should have been reëstablished on January 23, 1920, is beyond understanding. Not only did the System favor war paper by low rates but favored it in still another manner in that it extended loans to member banks on their notes collateralled by government obligations to the full par value of those securities even though Liberty bonds (1st 4¼'s) fell in the post-armistice period as low as eighty-four dollars.[172]

In its vast purchases of bankers' acceptances through 1919 the System must be greatly censored. This action simply created more purchasing power and to that extent sent prices to higher levels. In the upward swing of the cycle the open-market operations of central banks should be greatly curtailed if not entirely discontinued.

Not as yet can we say that the System has developed a clear cut discount policy. Obstacles in the form of Treasury policies, the vagueness of the Board's theory of prices, their doubts as to the efficacy of the Bank rate prevented this. They wavered in theory and practice. With indifferent success they relied on methods other than the Bank rate to achieve deflation. It was with this state of mind, with a vagueness as regards fundamentals, that the Board entered into the period of deflation.

[172] *The Financial Review*, 1921, p. 226. This practice was given up by the Federal Reserve Bank of New York on July 1, 1921, after which date it loaned on government obligations up to only their market value. *The Commercial and Financial Chronicle*, June 4, 1921, p. 2366.

CHAPTER VIII

DEFLATION

It was in May of 1920 that wholesale commodity prices reached their maximum in the United States at 147% above their average level for 1913.[1] Prices had reached a maximum in England and Japan during March; in France and Italy, during April; in India and Canada, during May; in Sweden, during June, in the Netherlands, during July; and in Australia, during August.[2] Within the short space of five months wholesale prices had turned downwards in the greater part of the world. Only in those countries where budgets were met by constant outpourings of paper money did prices continue upwards. The price declines affected oriental and occidental nations, the northern and southern Hemispheres, absolute monarchies and democracies alike. It respected no boundary of race or nationality. It was world wide. In America the general wholesale price index continued downwards, declining rapidly at first and then more slowly, until it reached a minimum of 138 in January of 1922.

The Japanese Crisis. The first forewarning of the general decline in prices was the collapse of the silk market in Japan in March of 1920. Except for a short crisis immediately following the outbreak of hostilities in Europe Japan prospered and buzzed with activity during the Great War. She profited enormously by the operation of her merchant marine and the growth of her export trade. Many new financial and trading corporations were formed. New capital flotations reached enormous

[1] It will be remembered that it was during the latter part of April that the retail price cutting movement began in America. (*The Financial Review,* 1921, p. 31.) At the St. Louis fur auction held on May 11 prices dropped from 20–30% and at the wool auction held in Boston on the 20th of the month from 10–20%. The Bureau of Labor index number of wholesale prices recorded a decline of four points in the index number of June over that of May, the greatest declines taking place in cloths and clothing which fell from 328–314, in farm products which fell from 241–237 and in building materials which fell from 293–275.

[2] *Report of the Joint Commission of Agricultural Inquiry,* Part I, p. 58.

figures.[3] Prices rose in Japan during and after the war as they did throughout the rest of the world. The inpourings of gold, resulting from her increased export trade, caused notes and deposit currency to swell and prices to soar even higher than they did in the United States.

EXPORTS AND IMPORTS OF SILVER AND GOLD [4]
(*In yen—000 omitted*)

Year	*Exports*		*Imports*	
	Gold coin and bullion	Silver coin and bullion	Gold coin and bullion	Silver coin and bullion
1914	26,039	3,611	7,104	2,003
1915	40,675	3,891	24,159	137
1916	22,362	5,717	99,902	1,128
1917	150,689	3,097	386,991	5,234
1918	922	16	829	4,187
1919	1,486	3,568	325,771	1,706
1920	10	3,887	392,303	12,424

NOTE AND DEPOSIT EXPANSION AND WHOLESALE PRICES

Date	*Bank of Japan* (*In millions of yen*)			*Wholesale Prices*	
	Notes	Deposits	Reserves	Date	Index
Dec. 26, 1914	386	118	218	1914	96
Dec. 25, 1915	430	245	248	1915	97
Dec. 30, 1916	601	380	411	1916	117
Dec. 29, 1917	831	594	650	1917	147
Dec. 28, 1918	1145	992	713	1918	192
Dec. 27, 1919	1555	1146	953	1919	236
1920—End of				1920:	
January	1375	1167	944	January	301
February	1360	1146	937	February	313
March	1368	1181	921	March	321
April	1367	1261	917	April	300
May	1328	1209	930	May	271
June	1349	1165	980	June	247

The tremendously high prices prevailing through the latter

[3] For statistics see *Federal Reserve Bulletin*, 1920, p. 961.

[4] Sources: *Résumé Statistique de L'Empire du Japon*, 1922, p. 67. *Federal Reserve Bulletin*, 1920, p. 1077; 1921, pp. 208, 1300.

part of 1919 reversed the flow of trade.[5] Imports increased and grew to exceed the value of the goods shipped abroad. Foreseeing a loss of gold through this "adverse" trade balance the officials of the Bank of Japan became greatly concerned. They raised their discount rates and urged that private banks likewise conserve credit.

INTEREST RATES IN JAPAN [6]

	Bank rate	*Market Rates*
1919—July	6.57%	10% [a]
Aug.	6.57	10
Sept.	6.57	10
Oct.	7.30	10
Nov.	8.03	10
Dec.	8.03	10
1920—Jan.	8.03	9.38
Feb.	8.03	9.67
Mar.	8.03	10.15
Apr.	8.03	10.62
May.	8.03	10.95
June	8.03	10.99

[a] Average for 1919=10 per cent.

The contraction of credit coupled with a Chinese boycott was reflected in falling prices and in the collapse of the silk market in March. From January to May 1920, the index number of the price of raw silk in Yokohoma had fallen by more than 50% from 520 to 243. As a result of the confusion, uncertainty and lack of confidence prevailing everywhere, heavy sales of securities occurred with the result that on the 15th of March the Tokyo Stock Exchange was closed for two days. The failure of the Masuba Billbrokers' Bank on April 5 led to the closing of the Tokyo Exchange a second time and in addition the Osaka and Nagoya Exchanges were closed. After receiving as-

[5] FOREIGN TRADE OF JAPAN

Federal Reserve Bulletin, 1920, p. 849.
(*In millions of yen*)

	Imports	Exports
1920—Jan.	205	176
Feb.	271	174
Mar.	329	194
Apr.	297	217

[6] Source: *Report of the Joint Commission of Agricultural Inquiry*, Part II, p. 36.

surances of support from the Bank of Japan the exchanges reopened on the 13th but were forced to close again on the 15th and did not reopen finally until the 10th of May. The Japanese crisis led to a widespread fear in America that the Japanese gold balances, which amounted to considerable sums, might be withdrawn. Apprehending that a contraction of bank loans especially of stock exchange loans, would result therefrom, securities were sold in large amounts and prices on the New York Stock Exchange collapsed between the 19th and 22nd of April. The price of United States steel common, for example, fell by nearly 7 points. This decline was checked by cable dispatches from the Japanese Minister of Finance giving assurance that this stock of gold would not be withdrawn from America as Japan had an ample supply. The fall in prices and the crisis in Japan was not lost on the American people. It served as a lesson and a warning to banks and firms. The business community became more cautious and was less confident of the future, fearing as it did that the prices of other commodities might tumble as had the price of silk.

The Unevenness of Price Declines. General wholesale prices in America as noted before turned downward in May of 1920. By January 1922, the wholesale price index prepared by the Bureau of Labor Statistics touched bottom at 138%. The decline in prices was quite uneven, being much more severe in the case of some commodities than in the case of others.

INDEX NUMBERS OF PRICES BY GROUPS OF COMMODITIES [7]

	JANUARY, 1922
Groups	*Index*
Farm Products	122
Foods	131
Cloths and Clothing	176
Fuel and Lighting	195
Metals and Metal Products	112
Building Materials	157
Chemicals and Drugs	124
House Furnishings	178

Except for the producers of metal products and of chemicals and drugs the decline affected particularly the agriculturist whose condition during this depression, some have asserted, was

[7] *Monthly Labor Review*, July 1922, p. 62.

worse than it had been for thirty years.[8] The lack of coöperation among farmers; the lack of marketing information and advice as to the future course of prices; the fact that the prices of raw materials fluctuate more widely than do the prices of manufactured goods; the fact that farm products are so dependent upon export trade; the fact that farmers cannot readily adjust their production to changes in the price level; the fact that farmers had accumulated no surplus or reserve accounts; the fact that they had entered extensively into commitments on the basis of the higher prices, may all serve to explain the farmer's plight. As noted in the *Federal Reserve Bulletin:*—

> The reason for this situation is not hard to find. Foodstuffs are peculiarly subject to the vicissitudes of the market. A relatively slight surplus will result in a disproportionately sharp drop in prices. On the contrary, scarcity in relation to demand will bring about a sharp rise. It was natural, therefore, that during the war prices of foodstuffs should advance out of relation to many other prices, even under such regulation of distribution and of selling prices as was enforced. Following the war the great increase in foreign demand for American products, coupled with active domestic buying, gave an enormous impetus to the rise in agricultural prices. As a result, at the peak of the domestic price inflation, the price index for agricultural products, according to the index of the Bureau of Labor Statistics as recomputed by the Federal Reserve Board, registered 314, while the all-commodity index reached 272. Following the general price decline, the price index of agricultural products dropped to 122 in July, 1921, while that of all commodities fell to 148 in the same month, the lowest point since the conclusion of the war. With prices for foodstuffs thus subjected to sharp and sudden fluctuations it is very necessary to develop credit machinery to enable the farmer to carry such surpluses within reason.[9]

While it is claimed that the farmers' difficulties were partly the result of defects in the American credit and banking system and while the depression might have been less severe if America had had, for instance, a branch banking system,[10] this is indeed not

[8] *Report of the Joint Commission of Agricultural Inquiry,* Part II, p. 7.

[9] *Federal Reserve Bulletin,* 1922, pp. 262–263.

[10] Even in England, a nation with the branch banking system, the farmer suffered severely. See, for instance, the *Monthly Review* of the London Joint City and Midland Bank Limited, for March 31, 1923, and *Federal Reserve Bulletin,* 1923, p. 579.

the whole story. More than additional credit facilities, the American farmer now requires markets, more adequate training in cost accounting and in agricultural science and a system of national warehouses stretching across the continent.

Frozen Credits. Frozen credits are credits which are continued beyond the time when the transaction which gave rise to them should normally have been liquidated. As a result of the rapid decline in commodity prices an alarmingly large proportion of the total loans and discounts carried by the commercial banks of the country became tightly frozen. The congestion of goods at points of production and distribution, the collapse of markets and the unwillingness of many producers to sell, inevitably resulted in the condition in which banks were forced to carry borrowers. Banks which attempted to force collections at this time found themselves in the silk business, dealing in automobiles, in the rubber trade, and in many other lines in which they had no experience. There is no way of estimating the extent of these frozen credits. All we may say is that a considerable proportion of the portfolios of banks were so constituted.[11]

A Panic Averted. The crisis of 1920 was not followed by a a panic as had been true in the case of nearly every other crisis since the Civil War. The country was not compelled to resort to the ignominy of issuing currency substitutes as it had been previously. Interest rates, though high, did not rise to panic levels. The expansibility of the Federal Reserve System prevented this from occurring. Failures among banks were rela-

[11] "The bank loans in the Northwest are frozen tight. On June 30, 1921, the aggregate deposits of all the banking institutions in the four states of Minnesota, North Dakota, South Dakota, and Montana were $1,375,069,000. Their loans and discounts were $1,219,819,000. On June 30, 1922, their deposits were $1,408,114,000 and their loans and discounts were $1,195,413,000. The increase in deposits was nominal, amounting to 2.4%, and the decrease in loans and discounts was even less important, amounting to $24,406,000, or 2%. This liquidation of $24,000,000 came from the cities, where many firms have been contracting their business and credits during the past three years. It is quite generally agreed that there has been no legitimate liquidation in farm paper during the past two years. The War Finance Corporation put approximately $60,000,000 in new money into these States during the same time. It is true that the large city banks may show an artificial liquidation, caused by compelling the small country banks to transfer their debts from them over to the War Finance Corporation. This arrangement enabled the large city banks to liquidate, with the help of the War Finance Corporation, a very large percentage of their slow and doubtful farmer's paper which was held by them as collateral to county bank obligations." (Sinclair, *Why the Farmer Starves,* p. 415.)

tively few. The System coöperated in reorganizing many shaky institutions and groups of commercial banks sustained others. The absence of any serious financial disturbances in America was strong proof of the stability of the reconstituted American banking system and its ability to absorb shocks.

Crisis of 1920 Compared with Previous Crises. It might be of interest to compare some of the high points in the period from 1920 to 1921 with previous crises. For example, we find that, as measured by numbers, failures reached a peak shortly after the crises of 1893 and 1907, while after the crisis of 1920 they did not begin to increase appreciably until in 1921, and were fairly well scattered through 1921 and 1922.[12]

COMMERCIAL FAILURES.
NUMBER.

Month.	1893	1894	1907	1908	1920	1921	1922	1923
January	3,202	4,304	1,355	1,949	569	1,895	2,723	2126
February			924	1,621	492	1,641	2,331	1508
March			853	1,339	566	1,336	2,463	1682
April	3,199	2,734	799	1,309	504	1,487	2,167	1520
May			857	1,379	547	1,356	1,960	1530
June			815	1,112	674	1,320	1,740	1358
July	4,015	2,868	777	1,232	681	1,444	1,753	1231
August			850	1,119	673	1,562	1,714	1319
September			856	1,026	677	1,466	1,566	1226
October	4,826	3,979	1,139	1,187	923	1,713	1,708	1673
November			1,180	1,120	1,050	1,988	1,737	1704
December			1,316	1,217	1,525	2,444	1,814	1841
Total	15,242	13,885	11,721	15,690	8,881	19,622	23,676	18,718

The longer interval between the crisis and the month failures attained a maximum in this past cycle may be accounted for by the Reserve System. Commercial banks by rediscounting with the Reserve Banks were in a better position to aid business men. No banking system can protect the insolvent, but a central bank with an elastic credit and currency system is a protection to the solvent but temporarily embarrassed business man. In 1907 the business community had to take care of itself; there were no rediscounting agencies, and consequently failures were heaviest immediately following the turn in prices.

In the following table the close relationship in the fluctuations of bank loans, interest rates, and commodity and security prices

[12] *Federal Reserve Bulletin,* 1922, p. 901; 1923, pp. 1101, 1192, 1268; 1924, pp. 33, 103. These figures should be interpreted in the light of a strong seasonal movement in failures. The seasonal index of failures is: J=139; F=110; M=104; A=94; M=96; J=86; J=93; A=88; S=89; O=96; N=96; and D=109.

CRISIS OF 1907		
Data	Maxium	Maximum
Wholesale commodity prices	October, 1907	
Average price of 12 industrial stocks		November, 1907
Interest rates—60–90 day paper—New York	December, 1907	
Interest rates—call loans—New York	October, 1907	
Bank clearings—New York		December, 1907
Bank clearings—outside New York		February, 1908
Average reserves of New York City Clearing House Banks		November, 1907
Average loans of New York City Clearing House Banks	November, 1907	
Average deposits of New York City Clearing House Banks		October, 1907
Failures	January, 1908	
Production of pig iron		January, 1908

CRISIS OF 1920–1921		
Data	Maximum	Minimum
Wholesale commodity prices	May, 1920	
Average of 25 industrial stocks		August, 1921
Average price of Liberty bonds		May, 1920
Bond prices (40 combined)		May, 1920
Bank rate—90-day paper—New York	June, 1920	
Interest rates—60–90 day paper—New York	August, 1920	
Interest rates—call loan rates—New York	February, 1920	
Bank clearings—New York		February, 1921
Bank clearings—outside New York		February, 1921
Bank debits		August, 1921
Net demand deposits—Reporting member banks	May, 1920	
Loans, Discounts, and Investments—Reporting member banks	September, 1920	
Bills rediscounted—Federal Reserve Banks	November, 1920	
Reserve percentage—Federal Reserve System		April, 1920
Failures (number of)	January, 1922	
Production of 22 basic commodities		July, 1921

should be noted, as well as the inverse relationship between commodity prices and reserves.

One of the facts brought out by this table is the long duration of the crisis of 1920 as compared with that of 1907. In 1907 the principal events transpired within five months; in 1920 they were spread over a period of nearly two years. In 1907 the financial and credit mechanism of America broke down immediately, precipitating a panic and forcing the cycle to a head. In the last crisis the elasticity of the Reserve System prevented the banking machinery of the country from collapsing. Banks were enabled to render greater service to the business community, the situation was eased, and events culminated more slowly.

The Discount Policy of the Reserve Banks during the Deflation Period. Having outlined very briefly the chief developments of the crisis of 1920 we shall proceed to a survey of the discount policy of the Federal Reserve System during the deflation period. In this connection we must not only trace changes in the Bank rates and in the earning assets of the Regional Banks but must also deal with a number of theoretical questions which have been in the past and are still the object of burning controversies. Many of these issues, like so many problems in the field of Economics, are not capable of quantitative determination. If they were they would no longer be objects of controversy any more than questions which might arise in some more exact science and which could be settled by resorting to laboratory tests. The forces which culminate in economic manifestations are often by their very nature so complexly interwoven and so manifold that we can not separate them and give to each its due weight with the same exactitude which is possible in the field of the physical sciences.

The Bank Rate. In June of 1920, it will be remembered, a 7% rate on ninety-day commercial paper was in force at the Boston, New York, Chicago and Minneapolis Reserve Banks while a 6% rate ruled at the Philadelphia, Cleveland, Richmond, and San Francisco Banks. The Atlanta, St. Louis, Kansas City and Dallas Banks had elected to inaugurate graduated rates of discount with 6% as the basic rate. For nearly a year, from June 1, 1920, to May 5, 1921, the rate on ninety-day paper at the Federal Reserve Bank of New York ruled at 7%.[13]

[13] Sources: *Discount Rates of the Federal Reserve Banks, 1914–1921. Ninth Annual Report of the Federal Reserve Board,* pp. 42–45.

Discount Rates at the Federal Reserve Bank of New York

Date on which rates were put into effect	*Commercial, agricultural and live-stock paper maturing within 90 days*	*Agricultural and live-stock paper maturing after 90 days*	*Agricultural and live stock paper maturing from within 6 to 9 months*	***Trade** accept-ances*	*Bankers' accept-ances maturing within three months*	*Paper secured by treasury notes and certificates of indebtedness maturing within 90 days*	*Paper secured by Liberty bonds and Victory notes maturing within 90 days*	*Authorized minimum rates on acceptances purchased in open market*
In effect on								
Jan. 1, 1921	7%	7%		7%	6%	5½%	6%	5%
Feb. 5,	....	....		...	...	6%	...	...
May 5,	6½%	6½%		6½%	...	...	...	...
June 16,	6%	6%		6%	...	...	...	...
July 21,	5½%	5½%	Made eligible by	5½%	5½%	5½%	5½%	...
Sept. 22,	5%	5%	Agricultural	5%	5%	5%	5%	...
Sept. 23,	....	....	Credits Act of	...	...	...	...	4%
Nov. 3,	4½%	4½%	March 4, 1923	4½%	4½%	4½%	4½%	...
Jan. 19, 1922	....	....		...	...	...	...	3½%
April 7,	....	....		...	...	...	...	3%
June 22,	4%	4%	4½%	4%	4%	4%	4%	2½%
Feb. 23, 1923	4½%	4½%		4½%	4½%	4½%	4½%	...
Mar. 4,	....	....		...	...	...	...	...
May 1, 1924	4%	4%	4%	4%	4%	4%	4%	...

While rates of discount at other central reserve banks have from time to time been raised to higher levels, never have they remained at a level as high as this for so long a time. During the same period market rates on four to six months commercial paper ruled even higher, fluctuating as they did between 7 and 8%. Beginning on May 5, when the ninety-day rate at the New York Bank was

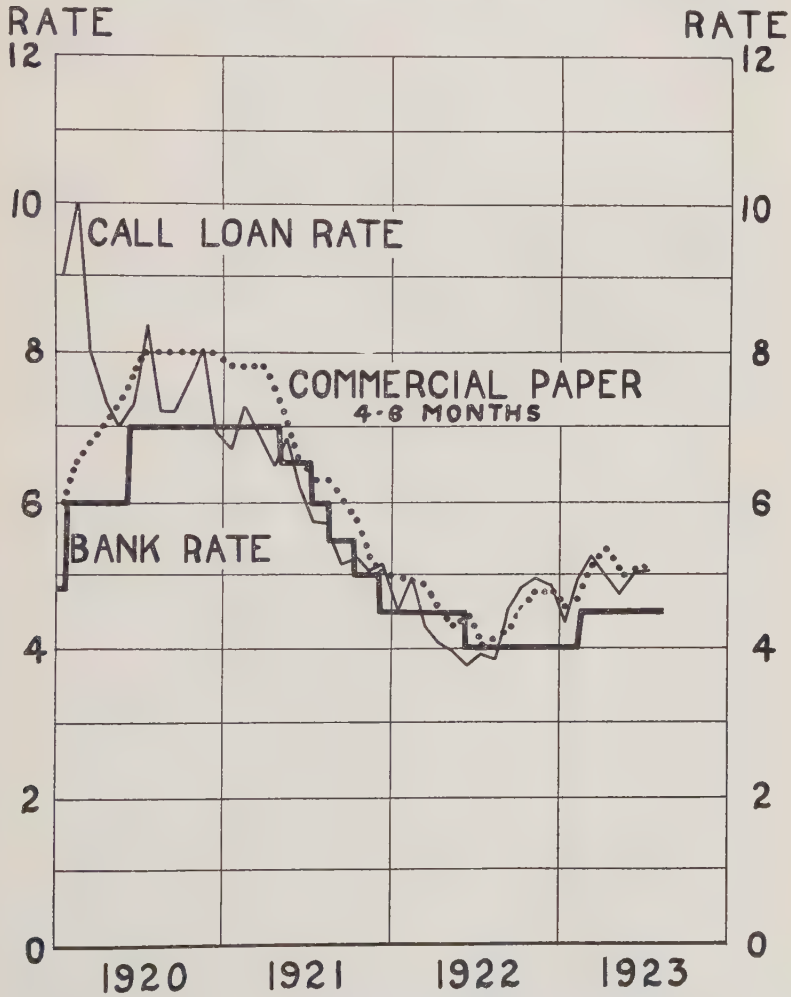


Chart XXI: Fluctuations in the Bank Rate of Ninety-day Commercial Paper at the Federal Reserve Bank of New York Compared with Fluctuations in Market Rates of Interest.

reduced from 7 to 6½%, successive reductions of ½ of 1% at a time were made until on the 3rd of November it was reduced to 4½% and on June 22, 1922, to 4%. The Bank rate remained at this figure until February 23, 1923, when it was raised to 4½% as a result of a series of events with which we shall deal later.

Bank Rate below Market Rates. Throughout this whole

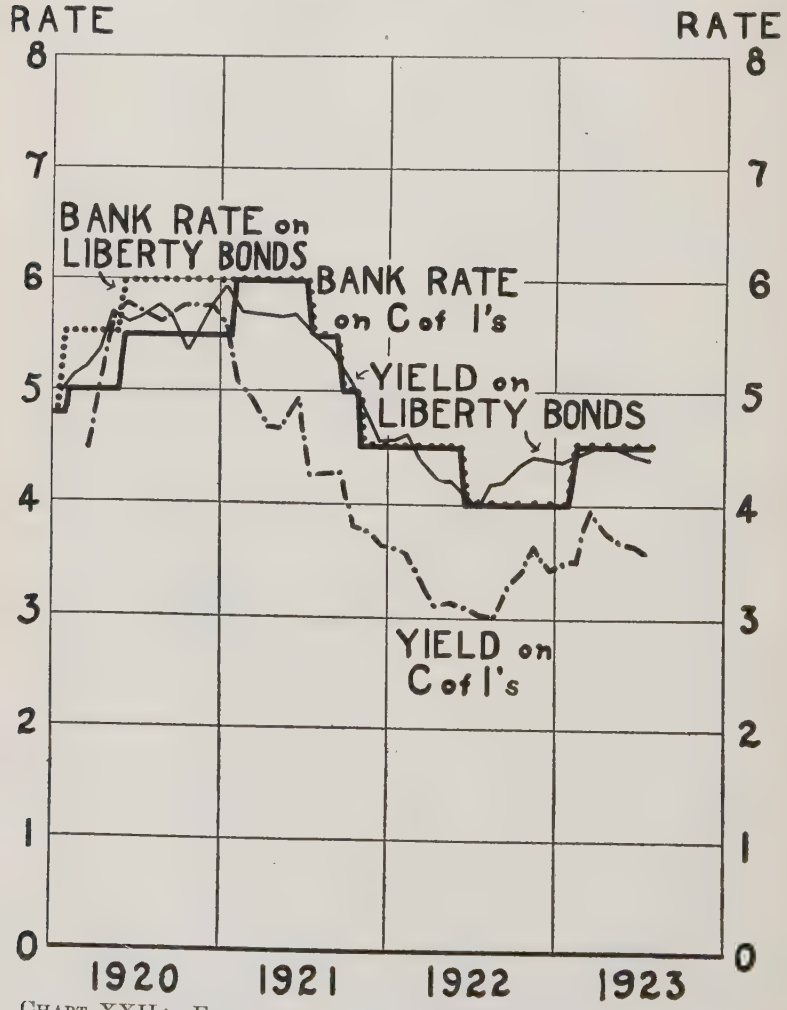


CHART XXII: FLUCTUATIONS IN THE BANK RATES AT THE FEDERAL RESERVE BANK OF NEW YORK ON PAPER COLLATERALLED BY GOVERNMENT OBLIGATIONS COMPARED WITH THE YIELD OF THOSE OBLIGATIONS.

period the Bank rate on ninety-day commercial paper remained below corresponding rates in the market. As market rates fell and approached the Bank rate, it too was reduced so that at all times it stood at a lower level than market rates of interest. The statement that market rates were consistently higher than the Bank rate is correct in so far as it refers to the Bank and market rates on commercial paper. Bank rates, however, on

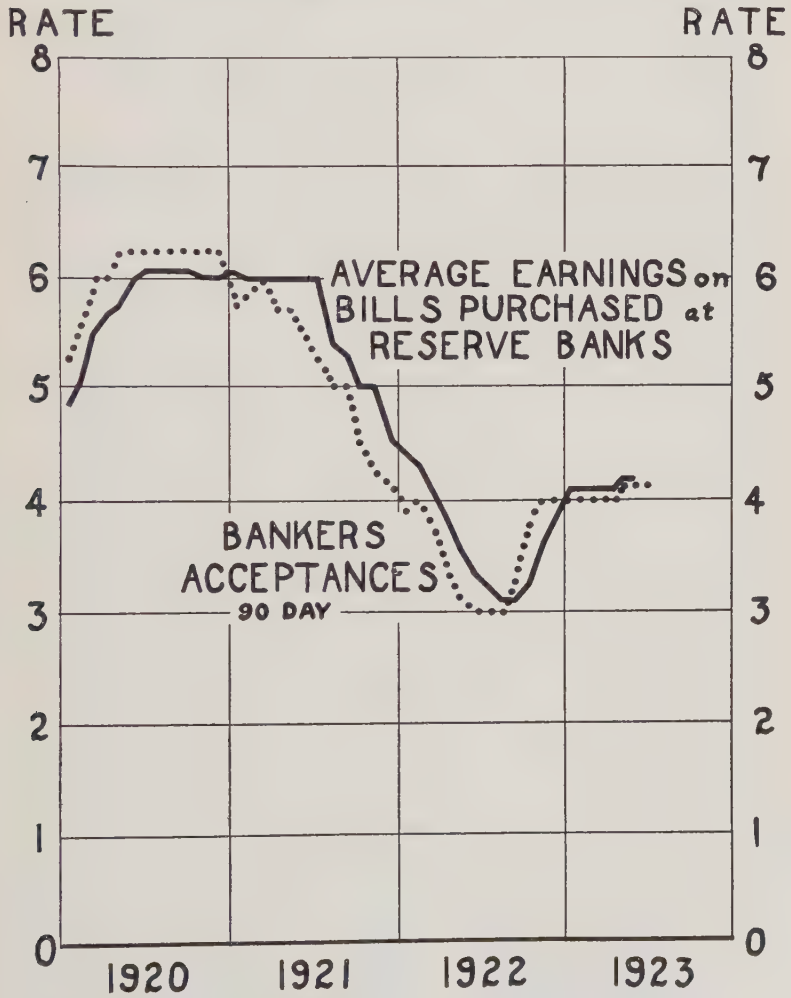


Chart XXIII: A Comparison of the Average Earnings on Bankers' Bills Purchased by the Reserve Banks with the Market Rates on Bankers' Bills.

paper collateralled with certificates of indebtedness and with Liberty bonds did, through part of the period, rule higher than their respective yields. The same is true of the buying rate on bankers' acceptances which ruled slightly higher than market rates. Some claim that because this has been the case, because the buying rate at the Reserve Banks on bankers' bills has ruled above the market, that therefore it is correct to say Bank rates in general have ruled above market rates. In other words, they would define market rates as those rates borne by bankers' bills. They would also assert, since promissory notes offered for discount bear the endorsement of a member bank, that their credit standing is comparable with that of bankers' bills. The conclusion would then be drawn that a Bank rate ruling above market rates on bankers' bills may be said to stand above rates on all paper offered for discount. Can it be claimed, however, that Bank rates on commercial paper are above the market unless they exceed market rates prevailing on commercial paper? The fact that paper offered for rediscount must bear a bank indorsement does not result in any metamorphosis which makes it an acceptance and entitled to the rates prevailing thereon. The Bank rate is not above the market unless it stands above market rates on the various classes of paper which are eligible for rediscount or purchase.

A Definition of Market Rates. Confusion must necessarily arise from seeking to define all market rates of interest in terms of one rate. There are many market rates, depending upon the credit standing, the maturity and the nature of the paper offered for discount or purchase. It is impossible to reduce all to one common classification. The mistake of endeavoring to do this has arisen perhaps from the fact that mention is commonly made of the market rate in London as if there were really only one rate. What is meant, however, by the market rate in that connection is the rate prevailing on bankers' bills. The minimum rate of discount at the Bank of England is applicable to this type of paper alone and generally rules above the corresponding market rate. Some of the market rates in London, as for instance the rate on overdrafts, rule actually higher than the Bank rate. To the Bank of England this is a matter of indifference. There is no Bank rate on overdrafts for they are incapable of rediscount. We must therefore recognize that there are several market rates of interest in America on the types of paper eligible for purchase or discount at the Reserve Banks,

i. e., the rate on acceptances, commercial paper rates, and the yield afforded by government obligations. The Bank rates (for the Reserve Banks should not attempt to have a uniform rate for all types of paper) should rule above these several rates respectively.

From the point of view of the Reserve Banks the determination of market rates on commercial paper is a matter of some difficulty. It is usually represented, as we have been compelled to represent it in parts of this work, by the buying rates of commercial paper houses. This rate is not exactly representative of the paper discounted by the Reserve Banks for commercial paper houses will buy only the best paper offered by the larger business men of the country. A simple and somewhat more accurate representation of market rates on commercial paper would be an average of the rates charged on the paper offered by member banks for rediscount with the Reserve Banks.[14] This might be an average weighted either by the number of pieces of paper or by the size of the paper offered for discount at the various rates. The Federal Reserve Board has made some computations of the rates charged by member banks on paper offered for discount which follow:[15]

[14] Messrs. Hepburn and Anderson in *The Gold and Rediscount Policies of the Reserve Banks,* suggest line of credit rates as a criterion of the market. The difficulty of securing such rates from banks, particularly from those located in small centers, and the fact that they do not fluctuate readily in response to economic conditions, rule them out as a good index of the market. See Harding, *Principles Governing the Discount Rate,* p. 185.

[15] *Ninth Annual Report of the Federal Reserve Board,* p. 16.
In a letter written to Governor McKelvie of Nebraska, Governor Harding presented some interesting statistics of market rates in that state: (*The Commercial and Financial Chronicle,* October 8, 1921, pp. 1521–1523.)

AMOUNT OF PAPER DISCOUNTED BY OMAHA BRANCH IN AUGUST 1921 AT 6%, ON WHICH MEMBER BANKS HAD CHARGED A RATE OF

Rate	*Amount*	*Percent of Total*	*No. of notes*	*Percent of Total*
6½%	$ 546,100	7.47%	26	1.50%
7	1,650,100	22.58	67	3.87
7½	1,977,400	27.06	95	5.48
8	1,870,400	25.59	468	27.00
8½	400	0.01	1	0.06
9	460,900	6.31	152	8.77
10	796,800	10.90	913	52.68
12	6,100	0.08	11	0.64
	$7,308,200	100.00	1,733	100.00

AVERAGE RATES CHARGED BY MEMBER BANKS ON CUSTOMERS' PAPER REDISCOUNTED WITH FEDERAL RESERVE BANKS DURING DECEMBER, 1921 AND 1922.

Federal reserve bank.	Average rates charged by member banks in—								Average rates charged by Federal reserve banks.	
	Large cities.		Medium size cities		Small size cities and towns		All classes of cities			
	Dec., 1922.	Dec., 1921.	Dec., 1922.	Dec., 1921.	Dec., 1922.	Dec., 1921.	Dec., 1922.	Dec., 1921.	Dec., 1922.	Dec., 1921
Boston	4.81	6.05	5.49	6.12	5.82	6.22	4.84	6.05	4.00	4.50
New York	4.94	6.00	5.97	6.02	5.74	6.11	4.99	6.00	4.00	4.50
Philadelphia	4.98	5.96	6.00	6.00	5.86	6.03	5.00	5.97	4.50	4.50
Cleveland	5.63	6.26	6.05	6.42	6.22	6.30	5.67	6.26	4.50	5.00
Richmond	5.93	6.07	6.19	6.75	6.74	6.94	6.20	6.60	4.50	5.13
Atlanta	5.81	7.10	6.98	7.52	7.91	7.93	6.34	7.34	4.50	5.28
Chicago	4.97	6.38	6.27	7.07	7.46	7.52	5.36	6.60	4.50	5.00
St. Louis	5.33	6.37	6.63	7.55	7.78	8.04	5.61	6.69	4.50	5.00
Minneapolis	5.73	6.78	7.38	8.88	8.98	8.74	8.08	7.65	4.50	5.50
Kansas City	6.26	7.18	6.36	7.33	8.80	8.92	7.06	7.87	4.50	5.00
Dallas	6.34	7.60	8.55	8.30	9.75	9.69	8.41	8.97	4.50	5.50
San Francisco	5.23	6.08	7.24	7.31	8.01	8.19	5.44	6.37	4.00	5.00
Total	5.10	6.12	6.41	7.15	7.69	7.97	5.38	6.50	4.30	4.91

It will be noted that during December 1921, the discrepancy between the rates charged by the Reserve Banks and the average of the rates charged by member banks on paper discounted with the System varied from 1.37% in San Francisco to 3.47% at Dallas and that in December 1922, this margin varied between ½ to 1% in the Philadelphia district to 3.91% in the Dallas district. In other words, in order to equal market rates of interest as defined in this section the Bank rate in Philadelphia in December of 1922 should have been advanced from 4.5% to 5% and in Dallas from 4.5% to 8.41%.

It would be politically unfeasible many would assert to have a rate at one Reserve Bank approximately 3½% above that prevailing at another. Of course if the Reserve Banks are to consider solely the political consequences of each one of their actions, a scientific policy of rate control will never be developed. Such measures as the use of moral pressure, the outright refusal of paper offered for discount, the rationing of credit, and the raising of the credit requirements of eligible paper would have to be resorted to as a means of checking inflation, speculation and a continual employment of the rediscounting facilities of the

Reserve Banks. Others might assert that the establishment of an 8½% rate in Dallas and a 5% rate in Philadelphia would not only be politically impossible, but would also be economically undesirable in that the Bank rate in Dallas should be no higher than the rates which banks in Dallas are charged when they borrow funds from commercial banks in New York City. In other words if the X National Bank in New York charges the Y National Bank in Dallas, 5% for a loan, this should set the maximum limit beyond which the Bank rate in the Dallas district should not be raised. The theory underlying this contention is that banks in the Dallas district should be accommodated by the Federal Reserve Bank of Dallas, even though it be forced to borrow from other Reserve Banks, rather than that the banks in Dallas should borrow directly in New York.[16] This point of view is not tenable. In the first place, the X National Bank of New York would loan only to those banks in the Dallas district whose credit position were of the best, while the Reserve Bank must deal with all the member banks. In the second place, as the X National Bank is not a note-issuing, reserve-holding bank it has not the responsibility of conserving the country's monetary stock of gold and checking inflationary tendencies which are part of the duties of the Dallas Reserve Bank. The X National Bank is guided solely by the desire for profits; it is anxious to extend the maximum amount of credit it may without jeopardizing its own safety. The Dallas Bank on the other hand should not be actuated by such motives. Its purpose is not to make money but to exercise a general oversight and control of credit extensions in its district. It should not make it profitable for the member banks to rediscount but should so fix its rates that they will discount only when they have a real need for funds. Finally would it not be just as logical and as untenable to assert that the Bank rate in New York should not exceed market rates in London because New York banks borrow funds there from time to time.

Reasons for Asserting that the Bank Rate Should Rule Above the Market. At this point it might not be amiss to recall to mind the reasons which should induce central bankers to set their rates above those prevailing in the market. Especially in the upward sweep of the business cycle is it of the utmost importance that Bank rates should exceed the market. In most nations

[16] The borrowing of money in New York by banks in the Dallas district is not undesirable, promoting as it does a nation-wide mobility of funds.

central reserve banks have a monopoly of the note issue privilege and hold the banking reserves of commercial banks. It is because commercial banks have not the right of note issue and do not hold the banking reserves of the nation that their interest charges are of comparatively little importance. If the X National Bank in New York lowered its rates of interest and expanded at a faster rate than other banks it would not be long before it would experience debit balances at the clearing house which would compel it to build up its deposit account with the Reserve Bank.[17] This the X National Bank could do by rediscounting or by remitting cash items. If the Bank rate were lower than market rates it would follow the first method which would simply increase the liabilities of the Reserve Banks; but if the Bank rate were above the market, it would follow the second which would impair immediately this bank's ability to expand. A Bank rate which stands below market rates of interest will encourage rediscounting and the expansion of credit on the part of member banks. It does not take long for an expanding volume of credit on the upward sweep of the cycle to reach a point beyond which increases will engender a rise in prices and not further production. A Bank rate ruling below market rates will induce member banks to rediscount during a period when trade is buoyant and business confidence is running high. Bank rates should be set high enough to penalize steady rediscounting and high enough to induce borrowing banks to repay their borrowings incurred for seasonal or cyclic needs.

Most authorities in America take this point of view. For instance we find the following statement in the *Report of the Joint Commission of Agricultural Inquiry*, Part II;[18]

> The discount rates of Federal reserve banks in accordance with the policy of banks of issue, in almost all of the countries, having a central banking system, should normally be slightly above the rates carried by the class of paper to which they apply, in order that the lending power of the Federal reserve banks may be preserved for times of financial stringency and crisis and in order that this lending power shall not be depleted by member banks borrowing from them for purposes of profit only.

[17] In New York City clearing house balances are settled on the books of the Federal Reserve Bank.

[18] P. 11

Governor Strong in his testimony before the Joint Commission of Agricultural Inquiry stressed the point that a Bank rate prevailing below market rates of interest "would be an invitation to the member banks to use the credit resources of the reserve system for the purpose of making a profit, and that is an invitation to an enlargement of the credit and the currency of the country, and to speculation." [19] Governor Harding branded as a fallacy the theory that discount transactions should yield a profit to the member banks.[20] Quotations similar to these might be multiplied indefinitely.[21] As opposed to this point of view the Federal Reserve Bank of Cleveland in a little pamphlet entitled *A Profitable Privilege*, evidently printed for the purpose of encouraging state banks to become members, calls attention to the fact, with apparent approval, that membership in the System enables banks to make a margin of profit on their rediscount transactions. This point of view, that the Reserve Banks are wholesalers of credit, the fallacy of which we have indicated in an earlier passage, is fortunately not generally sponsored.

Reductions in Bank Rate through 1921. The reductions made in the Bank rate through 1921 [22] have since become the object of a considerable amount of controversy. With respect to these there are really two schools of thought; the one asserts that the Bank rate should have been reduced sooner, sometime in the Fall of 1920, and that to maintain a 7% rate until May of 1921 was needlessly severe upon the business of the country; the second maintains that the Bank rate was lowered too quickly and should have followed and not preceded market rates of interest on their downward course. The first school of thought is

[19] Part 13, p. 516.

[20] *Hearing before the Joint Commission of Agricultural Inquiry,* Part 13, p. 142. On another occasion Governor Harding asserted it was impracticable to have the Bank rate above the market. (*The Commercial and Financial Chronicle,* October 29, 1921, p. 1832.)

[21] For instance, see:

Hepburn and Anderson, *The Gold and Rediscount Policy of the Federal Reserve Banks,* pp. 6, 11, 12, 13.

Forgan, *Currency Expansion and Contraction,* p. 173.

Monthly Bulletin of the National City Bank, June 1922, pp. 9–10.

Eighth Annual Report of the Federal Reserve Board, p. 30.

Willis, *The Probable Trend of the Rate of Interest and Investment,* p. 23.

Kemmerer, *High Prices and Deflation.*

[22] For the Reserve Bank's reasons for these reductions see, the *Monthly Review* of the Federal Reserve Bank of New York for October 1, 1921, p. 1.

represented in the *Report of the Joint Commission of Agricultural Inquiry:*

> Notwithstanding the apprehensions of the Federal Reserve Board and Federal reserve banks regarding the possible results in a change in policy [as regards discount rates], the commission is of the opinion that a more liberal policy could have been adopted in the latter part of 1920 and the early part of 1921 and that the adoption of such a policy would have served to arrest in part the tide of deflation and to reduce the hardships and losses incident thereto.[23]

Professor Cassel holds the same belief that the maintenance of the Bank rate at 7% for nearly a year in America simply encouraged a further "aimless increase in the internal value of the dollar." [24] Those who sponsor this point of view must believe that market rates of interest, which ruled above the Bank rate during 1920 to 1921, would have fallen as reductions were made in the official rates of discount, for unless this were true a reduction in the Bank rate would not have lightened the hardships of the period of deflation. Thus there is implied in this theory the thought that fluctuations in market rates are determined by changes in Bank rates, that market rates rise as the Bank rate moves up because bankers in order to live must be able to rediscount at a profit,[25] and that market rates fall with the Bank rate because bankers will pass on the lower rates.

Influence of Bank Rates on Market. To what extent do changes in the Bank rate influence fluctuations in market rates? During a period when the resources of banks are abundant and there is a plethora of funds, a rise in the Bank rate will have no effect upon market rates of interest. Banks are not rediscounting and market rates remain low. If on the other hand, the period we are considering is one in which Bank rates rule below market rates of interest and a great many banks are rediscounting, of their own accord or perhaps encouraged by the central government, it might be possible for a short time to prevent rates prevailing in the market from rising to their natural levels, but only at the cost of rising prices. This is just what occurred during the time of America's participation in the war and in the period of

[23] *Credit,* Part II, p. 88. See also pp. 13 and 14. In a minority report (pp. 158–159) Representative Mills differed with this point of view.

[24] Cassel, *Money and Foreign Exchange After 1914,* p. 236.

[25] Hawtrey falls into this error. *Monetary Reconstruction,* p. 104. See, also, speech by Senator Owen, *Congressional Record,* Vol. 59, p. 7039.

inflation following the armistice. Conversely a central bank may at times, as did the Bank of England, force increases in market rates of interest, when the Bank rate rules higher than the market, by mopping up the surplus funds in the market and by forcing banks to rediscount at the Bank rate. At best, however, the power of a central bank to increase market rates, in a nation where the commercial banker has a fair share of the business, is quite limited both as to the extent of the rise and the duration of this higher rate. If the period we have under review is the downward swing of the cycle and if the Bank rate rules below market rates, as was true during the latter part of 1920, it is quite doubtful whether reductions in the Bank rate would affect rates in the market.[26] Indeed, if they did it would probably result in a recrudescence of inflation. At such a time market rates will fall only as frozen credits become liquidated, as borrowers meet their debts, and as deposits swell through savings. During the downward sweep of the cycle when banks are cautious and chary of granting new loans, and when business is at a standstill, reductions in the Bank rate would not be passed on. The Bank rate should descend only as economic conditions improve and the market rate subsequently declines. True, the critic might respond, but reductions in the Bank rate would have a decided psychological effect, would instill confidence. This psychological effect, however, could be obtained through an expansion in open-market operations on the part of the Reserve Banks without resorting to the dangerous expedient of lowering the Bank rate beneath the market.

The essence of the foregoing discussion is that central banks can control fluctuations in market rates of discount to a very limited extent. To assert that fluctuations in market rates are controlled entirely by changes in the discount rates at the Reserve Banks is a rank absurdity.[27] The resources of member

[26] The low rates prevailing at the Reserve Banks have not generally been passed on. The McAdoo commodity rate was not. See, also, Wright, *Bank Credit and Agriculture,* and Reynolds, *Rediscount Rates, Bank Rates and Business Activity,* p. 193.

[27] This is the view expressed by the Federal Reserve Bank of Minneapolis in its letter of Nov. 12, 1921 written to the Editor of the *Pioneer Press* at St. Paul. "If it is a proper assumption that the rediscount policy of the Federal Reserve Bank is a controlling factor in the rates which borrowers pay at the commercial banks, it might be pertinent, if high rediscount rates force high rates upon borrowers, to ask why it was during the pre-war period when rediscount rates were very low, that the then existing level did not produce very low rates to borrowers. It is common knowledge that an

banks amount to 33,852 millions of dollars and those of the Reserve Banks to only 5000 millions.[28] Furthermore, during no single month has more than 59% of the membership of the System rediscounted. Those institutions which are forced to rediscount have to meet the competition of those that are not compelled to borrow. At times central banks may be able to, and should force increases in market rates; and other times may be capable of holding them down temporarily through low Bank rates and an inflation of the circulating media. The Reserve Banks, however, are not omnipotent; their influence over market rates of interest is limited.

The second school of thought, regarding reductions in the Bank rate through 1921, asserts that it was reduced altogether too quickly, and that the Bank rate should have ruled above market rates through this period. This school is represented among others by James B. Forgan, a banker of Chicago.[29] With this point of view we are in full agreement. On the downward sweep of the cycle reductions in the Bank rate should follow and not precede the decline in market rates of interest.

A More Detailed Consideration of Changes in the Bank Rate. Returning to a somewhat more detailed consideration of the fluctuations in the Bank rate through this period, presented on p. 390, we notice:

advancing discount rate simply narrows the spread between the rate the borrower pays and the Federal Reserve Bank rate, or in other words, that the borrower's rate does not ordinarily advance as rapidly as the rediscount rate. With rediscount rates receding, it is improbable that the general level of the rate to borrowers will recede at the same rate or in the same proportion. It would be most disastrous if the popular assumption that rediscount rates control borrower's rates were true. We would then have twelve Federal Reserve Banks that absolutely dominated interest levels in the United States. The borrowers' rate would become hard and inflexible. The very great adaptability of the interest rates to the necessity of the particular individual or firm, which is one of the most valuable assets of our banking system, would be destroyed. No sound business man or banker would countenance for a moment any policy that put the control of commercial bank rates to borrowers, in the hands of any authority except the officers and executive committee of the particular bank. The dangers of such a situation are obvious and one of the most apparent would be the creation of the very situation which those who drafted the Federal Reserve Act were most anxious to avoid—namely, centralization of control over credit. The present situation under which every member bank has absolute freedom and independence in the making of rates to borrowers is infinitely more desirable."

[28] *Federal Reserve Bulletin,* 1923, pp. 842 and 863.

[29] *Currency Expansion and Contraction,* p. 170. See, also, statement by Continental and Commercial National Bank of Chicago appearing in the *New York American,* May 17, 1921, p. 14.

1) that the Bank rate was reduced by ½ of 1% at a time. If it be the policy of the Reserve Banks to move the Bank rate by steps of ½ of 1% it is a stilted one. The Bank rate should move by whatever intervals are demanded by the exigencies of the moment. At one time it was the policy of the Bank of England to move

A Summary of the Operation of Graduated Rates of Discount in the Kansas City District

Excessive borrowers

Months	Banks		Basic line		Borrowed	
	Number	Per cent	Amount	Per cent	Amount	Per cent
1920.						
April	178	16.8	$53,785,314.00	34.9	$106,851,047.36	84.5
May	202	19.1	51,631,836.00	35	99,301,688.50	79
June	253	23.9	48,328,728.00	.....	91,141,806.98	75.1
July	280	26.1	50,481,424.00	34.4	98,343,382.12	73.9
August	306	28.5	53,885,158.00	36.9	100,320,169.07	77
September ...	338	31.3	55,986,198.00	39.7	118,353,105.68	78.8
October	387	35.7	64,769,615.00	47.4	132,563,208.93	83.9
November	392	36	66,374,642.00	48.2	120,477,301.37	84
December	416	38.3	64,236,575.00	47.9	117,328,475.57	84.2
1921						
January	385	35.3	43,539,156.00	31.2	75,979,499.36	70.3
February	366	33.6	38,746,151.00	28.1	66,507,364.79	67.7
March	361	33.2	45,032,489.00	33.4	73,201,638.80	73.2
April	360	33.1	45,026,415.00	34.7	69,870,455.74	72.9
May	354	32.5	31,553,833.00	24.6	47,188,977.58	57.6
June	363	30.3	27,418,718.00	21.8	40,237,738.76	51.2
July	327	30	33,815,379.00	27.1	47,435,589.18	63.7

Nonexcessive borrowers

Months	Banks		Basic line		Borrowed	
	Number	Per cent	Amount	Per cent	Amount	Per cent
1920						
April	229	21.5	$44,000,559.00	28.5	$19,644,738.12	15.5
May	281	26.6	47,884,552.00	32.5	26,291,382.41	21
June	271	25.6	51,585,197.00	34.9	30,209,993.98	24.9
July	267	24.9	53,216,613.00	36.2	34,794,091.09	26.1
August ...	256	23.8	50,101,221.00	34.4	29,931,151.32	23
September .	271	25.1	49,993,692.00	35.4	31,770,599.26	21.2
October ...	282	26	41,240,211.00	30.2	25,518,270.19	16.1
November .	306	28.1	42,573,440.00	30.9	22,879,654.33	16
December .	304	27.9	40,098,105.00	29.9	21,940,907.68	15.8
1921						
January ..	325	29.8	51,196,991.00	36.6	32,123,539.70	29.7
February ..	326	30	54,788,070.00	39.8	31,718,715.82	32.3
March	319	29.3	46,958,050.00	34.9	26,864,200.30	26.8
April	344	31.6	43,687,418.00	33.6	25,888,075.40	27.1
May	342	31.4	56,847,750.00	44.3	34,680,197.68	42.4
June	307	28.1	57,516,192.00	45.7	38,364,274.92	48.8
July	324	29.8	46,060,824.00	36.9	26,997,256.80	36.3

Months	Nonborrowing Banks: Number	Nonborrowing Banks: Per cent	Nonborrowing Basic line: Amount	Nonborrowing Basic line: Per cent
1920				
April	656	61.7	$56,574,141.00	36.6
May	572	54.3	48,057,728.00	32.5
June	534	50.5	48,076,744.00	32.4
July	535	49	43,191,338.00	29.4
August	513	47.7	41,719,701.00	28.7
September	471	43.6	35,047,785.00	24.9
October	414	38.3	30,728,197.00	22.4
November	391	35.9	28,804,794.00	20.9
December	368	33.8	29,596,896.00	22.2
1921				
January	381	34.9	44,976,027.00	32.2
February	396	36.4	44,182,176.00	32.1
March	409	37.5	42,745,617.00	31.7
April	384	35.3	41,141,387.00	31.7
May	394	36.1	39,863,151.00	31.1
June	420	38.6	40,979,822.00	32.5
July	438	40.2	44,900,328.00	36

	Total: Number of banks	Total: Basic line	Total: Liability
1920			
April	1,063	$154,160,014.00	$126,495,785.48
May	1,055	147,574,116.00	125,593,070.91
June	1,058	147,990,669.00	121,351,800.96
July	1,072	146,889,375.00	131,137,473.21
August	1,075	145,706,080.00	130,051,320.39
September	1,080	141,027,675.00	150,123,704.94
October	1,083	136,738,023.00	158,081,479.12
November	1,089	137,752,876.00	143,356,955.70
December	1,088	133,931,576.00	139,269,383.25
1921			
January	1,091	139,712,174.00	108,103,039.06
February	1,088	137,716,397.00	98,226,080.61
March	1,089	134,736,156.00	100,065,839.10
April	1,088	129,855,220.00	95,758,531.14
May	1,090	128,264,734.00	81,869,175.26
June	1,090	125,914,732.00	78,602,013.68
July	1,089	124,776,531.00	74,432,845.98

their rate by such steps but it was later abandoned as too mechanistic and incapable of meeting all eventualities.

2) that with the reductions made in the rates prevailing on commercial and agricultural paper and trade acceptances on the 16th of June, 1921, a uniform rate of 6% prevailed on all types of paper eligible for discount. Since that time this has seemed to be the established policy of the System. As indicated in Chapter II uniform rates for discounts and advances do not prevail at central banks in Europe. In America it is not desirable that uniform rates should prevail irrespective of the maturity of the paper and irrespective of the question whether it is commercial paper or paper secured by government obligations.

3) that as a result of the establishment of a uniform Bank rate the preferential rates on war paper were abolished.

4) that the minimum buying rate for bankers' acceptances ruled from ¼ of 1% to 1% below the Bank rate.

The Abandonment of the Progressive Discount Rates. The most important development not revealed in this table was the abandonment of the progressive rates of discount. The Federal Reserve Bank of Atlanta was the first (on November 1, 1920) to discontinue the progressive rates of discount, substituting therefor a flat 7% rate. Progressive rates were discontinued at the Dallas Reserve Bank on February 15, 1921, at the St. Louis Bank on June 23, and at the Kansas City Bank on the 1st of August. As in the case of the Atlanta Bank, the Dallas Bank substituted a 7% flat rate upon abandoning its progressive rates. In fact at that time it was the policy of the Board to allow those Regional Banks which had inaugurated progressive rates with 6% as a basic rate to discontinue them only in case a flat 7% rate was substituted therefor [30] and a promise was made to scrutinize very carefully all paper offered for discount.[31]

Graduated Rates Applied Systematically only in the Kansas City District. The graduated rates of discount were in effect for the longest period in the Kansas City district. In that district alone, Governor Harding has declared, were they applied

[30] *Hearing before the Joint Commission of Agricultural Inquiry,* Part 13, p. 311.

[31] *Amendments to Federal Farm Loan Act and Federal Reserve Act,* pp. 47-48.

in a systematic manner.[32] A summary of the operation of the progresssive rates in that district follows:[33]

As judged by various statements, the officials of the Kansas City Bank seem enthusiastic in their praise of the efficacy of the progressive rates. In testifying before the Joint Commission of Agricultural Inquiry, Governor Miller said:

> Almost from the beginning of the Federal reserve system the city banks in our district had rather encouraged the country banks to avoid the Federal reserve bank and to concentrate their business and loans with them, the city banks.
>
> But after the progressive rate went into effect and the larger banks were confronted by the higher rates of interest [the larger banks had been borrowing excessively, in January 1920, four banks in Kansas City and nine banks in Omaha had absorbed 57% of the lending power of the Federal Reserve Bank of Kansas City], they at once communicated that information to their country correspondents and suggested to them that it would be the patriotic thing for them, at that time, to avail themselves of their share of the lending power of the Federal reserve bank. . . . From the very day we put in effect the progressive rate these new borrowers began to come forward. . . .
>
> Very likely a great part of the funds which were borrowed by the new borrowers was money turned back from the larger banks. This served well the purpose of the Federal reserve bank because we had a liability to those country banks, and in that way liquidated that liability, as it were, by them coming in and getting their share, which resulted in a greater distribution of credit.[34]

It was the larger banks which paid the progressive rates of discount. Governor Miller states that the member banks located in the reserve cities paid 81.76% of all the progressive interest charged.[35] This had the effect of checking quickly the extensive rediscounting of the city banks, which was carried on largely for the purpose of reloaning funds at a profit to bankers situated in smaller communities, and had the effect also of induc-

[32] *Hearing before the Joint Commission of Agricultural Inquiry,* Part 13, p. 352.

[33] *Report of the Joint Commission of Agricultural Inquiry,* Part II, pp. 66–67.

[34] *Hearing before the Joint Commission of Agricultural Inquiry,* Vol. 3, p. 740.

[35] *Ibid.,* p. 745.

ing the country banker to bring his paper directly to the Reserve Bank. The progressive rates were successful, so the officials of the Kansas City Bank affirm, in bringing about a better distribution of credit, and in spreading the lending power of the Reserve Bank among a number of member banks, lending power which had previously been absorbed by a few.[36] In effecting a better distribution of credit Governor Harding was of the opinion that the inauguration of the progressive rates had in reality resulted in an increase in the extensions of credit to the agricultural sections.[37]

A large number of member banks in the Kansas City district were heartily in favor of the progressive rates. When it was understood that there was some discussion of their abandonment bankers in the reserve cities passed resolutions declaring that the progressive rates were sound in principle and helpful and constructive in operation and that they had been an important factor in bringing about a fair and equitable apportionment of credit in the district.[38]

Considerable opposition however developed against the progressive rates of discount.[39] The feeling was common, especially among the members of the agricultural bloc, that their introduction had resulted in exorbitantly high rates of interest and in excessive pressure in rural centers to reduce borrowings; that graduated rates were too mechanical in their application; and that they penalized the banks, those unafraid to extend credit,

[36] *Seventh Annual Report of the Federal Reserve Board,* p. 537.

[37] *Hearing before the Joint Commission of Agricultural Inquiry,* Vol. 2, pp. 354-355.

[38] *Ibid.,* Vol. 3, pp. 745–746. Governor Harding has stated that the progressive rates of discount worked well in the St. Louis Reserve District. (*Ibid.,* Vol. 2, p. 140.)

[39] Regarding this opposition Governor Harding has spoken as follows:

Senator Glass. Governor, let me ask you this: Why does not the board exercise the discretion with which it is clothed by the text of the law, and which it was intended it should exercise; and in those States where the legal and contract rate is so high as to involve this subsidy to rediscount operations, why does not the board exercise its discretion and raise the rediscount rate to those people?

Mr. Harding. We did, you know. For a while last summer we instituted that progressive rate which Congress authorized, to cover that very situation; but there was such a tremendous clamor against anything of that sort (any bank that calls a loan now or asks for additional collateral is held up as an enemy to the public) that we yielded to the wishes of the directors of the Federal Reserve banks. (*Amendments to Federal Farm Loan Act and Federal Reserve* Act, p. 47.)

which were doing their best to remedy conditions. Much was made of the case of a bank in the Atlanta Federal Reserve District, which in the two-weeks period ending September 30, 1920, was charged on some of its borrowings the basic rate of 6% plus a super-rate amounting to 81½%. The reason for the high interest charges was that this bank had borrowed an amount equal to seven times its capital stock and had allowed its reserve balances to fall from $9433, the legal minimum, to $86. In consequence of the action of the Atlanta Bank in refunding all charges made in excess of 12%, including the basic rate, this bank actually paid a super-rate amounting to only 3.88% through this period.[40] Politicians and demagogues, however, seized upon this case as an awful illustration of the grasping and heartless disposition of the officials of the Reserve System. The charge that the progressive rates resulted in exorbitant interest rates falls completely when we compare the average rate of earnings on bills discounted at all the Reserve Banks through 1920 and 1921.

Annual Rates of Earnings on Discounted Paper

Federal Reserve Bank of:	1920	1921
Boston	5.91%	6.03%
New York	5.88	6.13
Philadelphia	5.48	5.49
Cleveland	5.88	5.85
Richmond	5.69	5.92
Atlanta	5.77	6.12
Chicago	6.17	6.40
St. Louis	5.83	5.97
Minneapolis	6.22	6.48
Kansas City	6.05	6.06
Dallas	5.67	6.25
San Francisco	5.79	5.82
Average	5.88	6.07

In 1920 the mean of the annual rates of earnings on paper discounted by the Reserve Banks having the progressive rates amounted to 5.83%, while for the entire System this equalled 5.88%. In 1921 both of these averages are the same, 6.07%. Through quite elaborate computations the Federal Reserve Bank of Kansas City proved that interest charges imposed upon member

[40] *Congressional Record*, Vol. 64, p. 2557. For an explanation of the reason for this rate, see the speech by Carter Glass, *Congressional Record*, Vol. 62, p. 1244.

banks in that district were actually less with rates progressing from a basic rate of 6% than had a flat 7% rate prevailed.[41] In spite of all this, however, as early as the 22nd of December, 1920, a bill was introduced in Congress to repeal the provisions of the Federal Reserve Act which permitted the progressive rates of discount.[42] This was finally accomplished in the Agricultural Credits Act approved March 4, 1923.

Judging from the opinions of the officials of the Reserve System, those who had charge of the operation of the progressive rates of discount, the graduated rates, did succeed in bringing about a better distribution of credit.[43] Their application, however, should have been general. The fact that it was not furnished political capital to those who affirmed that the farmer was being treated unjustly. There was as much reason for their introduction in the eastern districts as in the four districts in which they were applied. From the table inserted below it will be noted that on June 10, 1920, the total borrowings from the

PERCENTAGE RELATION OF TOTAL BORROWINGS FROM EACH FEDERAL RESERVE BANK TO TOTAL BASIC DISCOUNT LINE OF ALL BANKS IN THE CORRESPONDING DISTRICT

Federal reserve bank	*June 10, 1920*	*Oct. 9, 1920*	*Feb. 10, 1921*	*June 15, 1921*
Boston	68%	60%	54%	40%
New York	59	77	81	28
Philadelphia	113	72	77	72
Cleveland	48	32	43	47
Richmond	116	117	99	121
Atlanta	125	195	156	120
Chicago	95	107	83	65
St. Louis	123	126	74	66
Minneapolis	99	130	101	102
Kansas City	81	108	75	60
Dallas	88	116	90	84
San Francisco	71	80	68	71
Average	91	102	83	73

41 *Report of the Joint Commission of Agricultural Inquiry, Credit,* Part II, pp. 60-61.

42 By Representative McLaughlin, H. R. 15324, 66th Congress, 3d Session.

43 The Federal Reserve Board seemed somewhat skeptical as regards the effects of the progressive rates. (*Seventh Annual Report of the Federal Reserve Board,* p. 59).

Federal Reserve Bank of Philadelphia amounted to 113% of the basic line of the member banks, while they amounted to but 81% and 88% respectively in the Kansas City and Dallas districts where the progressive rates had been introduced.[44]

Even in New York, where Governor Strong claimed that the progressive rate was not applicable, this percentage, on February 10, 1921, amounted to 81% as compared to 75% for Kansas City.

If the progressive rates of discount are ever applied again it might be well, as Governor Harding has suggested,[45] to have but three gradations, the minimum rate applying to all borrowings within the basic line, say, for instance, a rate of 7%, and rates of perhaps 9% and 11% applying to borrowings in excess of this amount. Such a plan possesses the advantage of simplicity as contrasted with the plans adopted. Finally, no paper should be exempt from the application of the higher rates as were war and agricultural paper. The progressive rates should apply to all discounts and advances.

The Discount Operations of the Reserve Banks. The amount of bills rediscounted by the Reserve Banks continued to expand through 1920, reaching a peak on the 5th of November, six months after prices had started on their downward course.[46] The dates on which the bills discounted for the member banks in the various Reserve Districts reached a peak are given in the following table:

Federal Reserve Bank of	*Date of High Point*
Boston	December 26, 1919
New York	November 12, 1920
Philadelphia	February 27, 1920
Cleveland	December 26, 1919
Richmond	September 24, 1920
Atlanta	November 19, 1920
Chicago	September 24, 1920
St. Louis	October 22, 1920
Minneapolis	October 29, 1920
Kansas City	November 5, 1920
Dallas	September 24, 1920
San Francisco	December 10, 1920

In the Boston, Philadelphia and Cleveland Reserve Districts the peak of rediscounts occurred in December 1919, and in

[44] *Hearing before the Joint Commission of Agricultural Inquiry*, Part 13, p. 762.

[45] Ibid., Vol. II, p. 351.

[46] *Seventh Annual Report of the Federal Reserve Board*, p. 138.

February 1920. Industry is important in all three districts, which in the downward course of the cycle was liquidated early and quickly. The peak of the rediscounts in the remaining districts took place sometime during the last four months of the year. Though manufacturing is very important in the New York district the peak was not reached until the 12th of November. This was due to the fact that commercial banks in New York were extending funds to banks throughout the agricultural sections of the country and in so doing required the assistance of the Reserve Bank. Logically the discounts of central banks should increase after a crisis. Unable to force collections, business men must borrow from their banks, which in turn are compelled to call upon the central bank. Particularly throughout the agricultural sections did loans become frozen; farmers were unable to pay their commitments contracted on the basis of high prices for wheat and corn, and in some communities had to be carried by banks through four successive seasons.[47] Attempting to force collections would only serve to throw the farmers into immediate insolvency and bankers would obtain but a fraction of their loans. Farmers had to be carried, and in order to do so banks were forced to rediscount to an increasing extent with the Reserve Banks, especially as deposits were being withdrawn in the agricultural sections at the very time that loans were not being repaid. Through this period the policy of the Reserve Banks was, as it should have been, liberal.[48] A too strict scrutiny of the paper offered for discount, a too strict insistence upon credit tests, and the refusal to discount paper, would have occasioned the failure of many banks and in every way would have been a most disastrous policy. As John H. Rich, Federal Reserve Agent at the Federal Reserve Bank of Minneapolis has put it:

> It is better to save the reputable banks, assist their worthy customers, whether business men or farmers, to weather the storm, and hope for rehabilitation later, than to take a narrow view and force the bank to the wall, unsettle public confidence and perhaps precipitate again such conditions as were a quite familiar experience prior to the establishment of the Federal Reserve System.[49]

[47] Rich, *Expansion and Contraction from the Federal Reserve Standpoint*, p.181.

[48] The Board expressed itself as pleased that the Reserve Banks had extended liberal credits. (*Federal Reserve Bulletin*, 1921, p. 775).

[49] Rich, *Expansion and Contraction from the Federal Reserve Standpoint*, pp. 181–182.

In speaking of the assistance rendered by the Federal Reserve Bank of Kansas City to shaky financial institutions, Governor Miller, before the Joint Commission of Agricultural Inquiry, declared: [50]

> *Mr. Miller.* Well, we do not guarantee their continuance, but in dozens of cases we have saved them from bankruptcy, or from the hands of a receiver, because when we feel that a bank is solvent, although overextended, if there is any chance at all to save that bank and its clientele from disaster we give it every aid that it is possible to give up to the very point of taking the risk ourselves. We feel, however, Mr. Chairman, that we are not called upon to assume the risk and losses of an insolvent institution which has been brought to that State by unsound management. We could give you instances by the dozens where we have had all-night sessions to save such banks, and we have saved them; but we have always tried to save them with a view of not absolutely assuming the loss ourselves, and have succeeded very well so far.
>
> *Representative Ten Eyck.* You do not consider that it is your duty to guarantee them against disease, but you will help them out and cure them if possible?
>
> *Mr. Miller.* Yes; and neither do we consider it our duty to try to pump solvency into an insolvent institution. We cannot do it, because if a bank is insolvent and is not worthy to exist we do not feel it our duty to go to the same extent that we would for a solvent bank—a well-managed bank, one that is even overextended to the point of danger.

Apparently no curb was placed upon the borrowing banks by

It is on the upward sweep of the cycle that the Reserve Banks should scrutinize commercial paper with the greatest care and not during or in the period following the crisis, when prices are falling rapidly and business confidence is at a low ebb.

It is for their liberality during the upward sweep of the cycle that the Reserve Banks must be censored and not for their liberality during the crisis. In this connection it would not be amiss to quote a statement made by Mr. Thomas P. Kane, for many years Deputy Comptroller of the Currency, in his very charming book entitled *The Romance and Tragedy of Banking.* In speaking of the credit policies of the Federal Reserve Bank of Chicago he states (pp. 533–534):

[50] *Hearings of the Joint Commission of Agricultural Inquiry,* Vol. 3, p. 771. See, also, testimony of Governor Harding, *Amendment to Abolish Office of Comptroller of Currency,* etc., p. 43.

the Federal Reserve Bank of that district and the deplorable and critical situation which existed in Iowa was, in a great measure, due to the unreasonably large lines of credit extended to the member banks by the Federal Reserve Bank of Chicago, apparently without regard as to whether the funds loaned were to be used in legitimate business transactions or for speculative purposes or hazardous ventures.

In a number of cases the lines extended to these banks were largely in excess of justifiable and prudent limits.

In addition to the amount of eligible paper discounted for Iowa banks by the Federal Reserve Bank the volume of ineligible paper held by that bank as collateral to the eligible paper ran to very large totals. The proper exercise of even ordinary judgment by the Federal Reserve Bank at Chicago in extending credit to the member banks in Iowa would have prevented the situation in that State from becoming so acute.

The enormous deflation in commodity values would have caused a most unsatisfactory condition under the most favorable circumstances, but the critical situation that developed could have been avoided, or, at least, greatly ameliorated, if the Federal Reserve Bank at Chicago had not permitted the Iowa banks to become so desperately extended.

After about four years of this extreme liberality, the Federal Reserve Bank suddenly reversed its policy, and about January 1, 1921, commenced to advise the banks that they could have no more credit, but must arrange to liquidate their indebtedness. An active and vigorous campaign was then inaugurated through the Federal Reserve examiners to coerce the banks into liquidating their obligations to the Federal Reserve Bank.

. . . . . .

For the Federal Reserve Bank to insist that any great proportion of the borrowings of the banks be liquidated at that time was a thing impossible to be accomplished. The result of such a policy on the part of the Federal Reserve Bank was obvious.

Numerous complaints from different banks and from other sources were made to the Comptroller of the Currency of the attitude of the Federal Reserve Bank and the Federal Reserve examiners, which were brought to the attention of the Federal Reserve Board by the Comptroller. The Governor of the bank and some of its officers were summoned to Washington for a conference over the situation, with the result that a change of policy was immediately put into effect and the injudicious and destructive methods that had been

pursued were abandoned, and more constructive measures adopted in the nature of assisting the banks that were deserving of assistance.

Students of the discount policies of central banks are agreed that it is on the upward sweep of the cycle that central banks should discourage rediscounting and that this policy should be abandoned at the time of a crisis.

Holdings of Discounted Bills. The following table gives the holdings of discounted bills by months:[51]

HOLDINGS OF DISCOUNTED BILLS

Year	*Secured by U. S. Government Obligations*	*Other*	*Total*
	(000 omitted)		
1920			
Jan. 30	$1,457,892	$ 716,465	$2,174,357
Feb. 27	1,572,980	880,531	2,453,511
Mar. 26	1,441,015	1,008,215	2,449,230
Apr. 30	1,465,320	1,069,751	2,535,071
May 28	1,447,962	1,071,469	2,519,431
June 25	1,277,980	1,153,814	2,431,794
July 30	1,241,017	1,250,613	2,491,630
Aug. 27	1,314,830	1,352,297	2,667,127
Sept. 24	1,220,423	1,484,041	2,704,464
Oct. 29	1,203,905	1,597,392	2,801,297
Nov. 26	1,192,425	1,542,975	2,735,400
Dec. 30	1,141,036	1,578,098	2,719,134
1921			
Jan. 31	1,040,367	1,416,750	2,457,117
Feb. 28	997,965	1,391,545	2,389,510
Mar. 31	971,100	1,262,006	2,233,106
Apr. 30	937,652	1,138,916	2,076,568
May 31	787,244	1,120,669	1,907,913
June 30	637,590	1,113,760	1,751,350
July 31	577,774	1,063,838	1,641,612
Aug. 31	545,176	946,759	1,491,935
Sept. 30	496,844	916,169	1,413,013
Oct. 31	462,436	850,591	1,313,027
Nov. 30	476,360	705,941	1,182,301
Dec. 31	485,233	659,113	1,144,346

[51] Sources: *Ninth Annual Report of the Federal Reserve Board,* pp. 55-56. *Federal Reserve Bulletin,* 1923, pp. 378, 515, 629, and 735.

Up through November 1920, these figures are for the last Friday in each month. The figure for December 30, 1920, falls on a Thursday; thereafter the figures are for the last banking day in each month.

HOLDINGS OF DISCOUNTED BILLS

Year	*Secured by U. S. Government Obligations* (000 omitted)	*Other*	*Total*
1922			
Jan. 31	363,586	475,299	838,885
Feb. 28	284,614	427,963	712,577
Mar. 31	260,781	419,686	680,467
Apr. 29	185,743	324,361	510,104
May 31	171,106	300,384	471,490
June 30	167,241	294,177	461,418
July 31	132,390	273,788	406,178
Aug. 31	126,113	271,335	397,448
Sept. 30	162,780	300,916	463,696
Oct. 31	269,042	307,393	576,435
Nov. 29	315,280	334,816	650,096
Dec. 30	331,790	285,990	617,780
1923			
Jan. 31	377,482	219,769	597,251
Feb. 28	356,039	239,721	595,760
Mar. 31	372,768	326,146	698,914
Apr. 30	386,079	338,914	724,993
May 31	406,824	363,910	770,734
June 30	407,356	429,593	836,949
July 31	391,937	433,999	825,936
Aug. 31	412,318	471,235	864,562
Sept. 29	401,186	482,367	883,553
Oct. 31	425,650	458,150	883,800
Nov. 30	406,533	396,821	803,354
Dec. 31	353,685	369,383	723,068

From this table it will be noted that the total holdings of bills discounted reached a peak on the 29th of October, 1920, even though bills secured by government obligations were constantly declining. In fact, they were at a maximum in November of 1919.[52] It had been the policy of the System to induce member banks to rid themselves of their holdings of war paper and to discourage advances collateraled by government obligations.[53] In spite then of the preferential rates which prevailed on war paper until June 16, 1921, the Reserve Banks' holdings steadily declined.

Total holdings of discounted bills reached a minimum on the 31st of August, 1922, declining by $2,403,849,000 within twenty-

[52] *Ninth Annual Report of the Federal Reserve Bank*, p. 54.

[53] For discussion of the reduction of the bond holdings of reporting member banks, see *Seventh Annual Report of the Federal Reserve Board*, p. 79.

two months. The factors which were responsible for bringing about this decline in the loan account at the Reserve Banks were the liquidation of frozen credits resulting from better business conditions and imports of gold.

Liquidation of Frozen Credits. The liquidation of credit, as we have shown by a former table,[54] affected first the industrial centers of the East. Later, by April 1921, as shown in the following table considerable progress had been made along this line in the non-agricultural sections of the country.[55]

MEMBER BANKS GROUPED BY CHARACTER OF COUNTIES
(000,000 omitted)

Character of Counties	*Loans*			*Accommodation at Federal Reserve Banks*		
	May 4, 1920	Apr. 28, 1921	Mar. 10, 1922	May 4, 1920	Apr. 28, 1921	Mar. 10, 1922
Agricultural	$ 3,190	$ 3,154	$ 2,933	$ 226	$ 353	$241
Semi-agricultural	1,484	1,465	1.367	138	138	66
Non-agricultural	14,791	13,964	12,846	2,207	1,578	310

Between the spring of 1921 and 1922 liquidation proceeded at approximately equal rates in agricultural and non-agricultural counties. The member banks located in agricultural counties had not, however, reduced their borrowings with the Reserve Bank to anything like the same proportion as had member banks in non-agricultural counties.

PERCENTAGE RELATION OF TOTAL BORROWINGS FROM THE FEDERAL RESERVE BANKS TO TOTAL BASIC DISCOUNT LINE OF ALL MEMBER BANKS

1920	June 10	91 per cent
	Oct. 9	102 per cent
1921	Feb. 10	83 per cent
	June 15	73 per cent
	Nov. 30	40 per cent
1922	Nov. 30	20 per cent

[54] See pp. 410–411.

[55] *Ninth Annual Report of the Federal Reserve Board*, p. 8. As illustrative of the quick liquidation in the East, loans and deposits in New York City began to decline a year before the loans and deposits of the reporting banks in the rest of the country. *Report of the Joint Commission of Agricultural Inquiry*, Part II, p. 135.

The improvement which had occurred is illustrated in the above table.[56] The total borrowings from all the Reserve Banks on October 9, 1920, amounted to 102% of the total basic line of the member banks, and had fallen by November 30, 1922, to 20%.

Gold Imports. The second factor accounting for the liquidation of the loan account at the Reserve Banks was the imports of gold. From the lifting of the gold embargo to the 31st of August 1920, America suffered a net loss of gold as illustrated by the following table.[57]

GOLD MOVEMENT FROM JUNE 1, 1919, TO AUG. 31, 1920
(000 omitted)

Country	*Net Imports*	*Net Exports*
France	.....	$2,409
Great Britain	$82,514	.....
Netherlands	1,147	.....
Sweden	.....	1
Canada	59,315	.....
Argentina	.....	146,375
China	.....	59,395
India	.....	40,804
Japan	.....	132,856
All other	.....	146,462
Total		$385,326

After that time the gold flow changed its direction. From September 1, 1920, until December 31, 1923, the net imports amounted to $1,266,116,000.[58] The gold flowed in to liquidate foreign indebtednesses, to pay for purchases of goods, and to create dollar exchange for future use. This period may be divided into two parts. During the first part, which continued until the close of 1921, member banks deposited the imports of gold with the Reserve Banks for the purpose of liquidating a cor-

[56] *Hearing before the Joint Commission of Agricultural Inquiry*, Vol. II, p. 762.
Ninth Annual Report of the Federal Reserve Board, p. 3.

[57] *Ninth Annual Report of the Federal Reserve Board*, p. 177.

[58] *Ninth Annual Report of the Federal Reserve Board*, p. 177, and *Monthly Summary of Foreign and Domestic Commerce*. For discussions of the effect of those imports of gold upon the Reserve System, see the *Monthly Review of Credit and Business Conditions*, Second Federal Reserve District, August 1921, p. 12; October 1921, p. 12; January 1922: October 1922, p. 12.

responding amount of their indebtedness.[59] Since that time the gold imports have been used largely as a basis for the extensions of new credit. In 1921 the net imports of gold amounted to about 667 millions of dollars, while the earning assets of the Reserve Banks declined by nearly 1400 millions, or by an amount greater by 733 millions than the increase in the stock of gold. In 1922 the situation was different. Net imports of gold amounted to 225 millions, while the earning assets of the Reserve System, comparing the figures for January 31 and December 30, increased by over 100 millions of dollars. Available credit at the disposal of the American banks was thus greatly augmented. In fact on the basis of the more than $1,200,000,000 of gold imported since January 1921, there has been an expansion in bank deposits of $5,000,000,000, the major part of this taking place during 1922.

It was this influx of gold which, as shown in the accompanying table, was mainly responsible for the liquidation of the loan account at the Reserve Banks and for the rapid increase through 1921 in the reserve ratio.[60]

RESERVE RATIOS

Date		As Reported	With Reserves Constant at Nov. 5, 1920, level
1920	Nov. 5	43 %	43 %
	Dec. 3	44.1	43.6
1921	Jan. 7	46.4	44.2
	Feb. 4	49.3	46.0
	Mar. 4	50.8	46.4
	Apr. 1	52.4	46.2
	May 4	55.3	47.6
	June 1	57.4	48.5
	July 6	60.0	49.5
	Aug. 3	63.7	51.2
	Sept. 7	66.2	51.2
	Oct. 5	69.0	51.9
	Nov. 2	71.0	52.3
	Dec. 7	73.1	53.0

Had no additional gold been lodged with the Reserve Banks the reserve ratio would have risen from 43% to only 53% instead of to 73.1%, as was actually the case. Assuming that improved economic conditions in Europe will in time cause even a part of the gold received by the System since November 1920, to be

[59] See *Federal Reserve Bulletin*, 1923, p. 410.

[60] *Eighth Annual Report of the Federal Reserve Board*, p. 29.

withdrawn, the increase which was recorded in its reserve percentage is more apparent than real. It has even been suggested that the officials of the System assume the fiction, in formulating their discount and credit policies, that their real reserve percentage is that found by disregarding these gold accretions. Alarmed perhaps over the possibilities of inflation which their rapidly increasing gold reserves afforded, the System attempted by a change beginning January 9, 1924, in the weekly press statement of condition of the Federal Reserve Banks, to camouflage the size of its gold holdings. This change consisted of the insertion of an extra item entitled "Gold held exclusively against Federal Reserve notes" which was the total of two other items, "Gold with Federal Reserve agents" and "Gold Redemption Fund with United States Treasury." Strange enough on January 16 this new item amounted to $2,177,679,000 while Federal Reserve notes in actual circulation amounted to $2,084,320,000. In other words the percentage of gold reserve held against Federal Reserve notes was 104.5%. The Reserve note then is more than a gold certificate, whereas the law would permit the percentage of gold reserve to be as low as 40%. If it be the intent of the officials of the System to attempt to enact this innovation into law, the elasticity, seasonal and cyclic, of the Reserve note would be destroyed. A better method of camouflaging its gold holdings would have been for the System to have entirely ceased paying out Reserve notes and to have forced the gold coins and gold certificates in their possession into circulation.

Additional Statistics of Rediscount Operations. Additional statistics of the rediscount operations of the Reserve Banks through these years are given in the table on p. 420.[61]
The points to be noted in this table are:

1) That holdings of member bank collateral notes reached a peak in 1919, and that since that time have declined steadily with the passage of war financing and with the efforts made by the Reserve System to drive this type of paper from its portfolio. It should be noted that in all three years the advances on member bank collateral notes at the Federal Reserve Bank of New York were many times larger than those at any other Reserve Bank.

2) That discounts of agricultural and live-stock paper reached a peak in 1921 and that the percentage decline by 1922 in this type

[61] Source: *Annual Reports of the Federal Reserve Board,* and corespondence with the Board. Comparable statistics for 1923 have not been inserted, as at the present writing data are not available.

Bills Discounted for Member Banks
(000,000 omitted)

	Member Bank Collateral Notes			Rediscounted Paper		Agricultural and Live-stock Paper		Commercial Agricultural and Live-stock Paper	Bankers' Acceptances			Trade Acceptances		
	1920	1921	1922	1921	1922	1921	1922	1920	1920	1921	1922	1920	1921	1922
Boston	$ 3,878	$ 2,226	$ 700	$ 2,223	$1,556	$ 4	$ 4	$ 971	$ 22	$ .1	$ –	$ 5	$ 2	$ 1
New York	31,160	14,319	7,671	16,388	1,519	6	8	19,262	71	23	.2	46	34	9
Philadelphia	4,093	2,528	1,753	1,339	694	3	4	1,718	4	.5	–	5	. 2	.8
Cleveland	2,280	2,181	1,079	988	425	6	4	580	10	17	.7	26	26	14
Richmond	2,907	2,302	1,200	377	176	59	43	426	–	–	–	13	12	6
Atlanta	1,514	891	186	673	249	71	50	698	6	.7	–	14	12	5
Chicago	3,697	2,227	991	1,738	484	193	105	2,550	32	1	.08	26	9	1
St. Louis	1,350	958	655	586	172	52	33	1,068	7	8	1	13	5	4
Minneapolis	496	371	100	250	46	106	47	455	–	.9	–	3	3	.2
Kansas City	1,097	605	204	213	64	122	59	560	.4	.2	–	10	5	.09
Dallas	996	498	93	150	58	120	71	278	.7	.2	.1	6	4	.7
San Francisco	2,097	2,124	1,052	578	440	100	39	810	34	5	.9	25	17	3
Total	55,565	31,229	15,683	25,502	5,884	842	468	29,376	187	57	3	192	129	44

Totals for:
1919 72,548
1918 33,008
1917 7,743
1916 Sept. 11 – Dec. 31 39

Totals for:
1920 352
1919 125
1918 156
1917 29
1916 17
1915 20

Totals for:
1919 . 6,416
1918 . 6,538

Totals for:
1919 72
1918 20
1917 Data
1916 not
1915 available

Totals for:
1919 138
1918 187
1917 38
1916 5
1915 2

of paper was much less than in the case of rediscounts of commercial paper. In both 1921 and 1922 the Federal Reserve Bank of Chicago led in discounts of agricultural paper.

3) That discounts of bankers' acceptances reached a peak in 1920. This was a result of the importance of America's foreign trade during the first quarter of the year. By 1922 they had declined by 98.4%. During 1920 the Federal Reserve Banks of Boston, New York, Cleveland, Chicago and San Francisco discounted 90.3% of all acceptances; in 1921, 81%; and in 1922, approximately 66⅔%.

4) That discounts of trade acceptances reached a peak in 1920, as did discounts of bankers' acceptances, but declined much less rapidly. In 1920 and 1921 the Federal Reserve Bank of New York discounted more trade acceptances than any of the others; in 1922 it was the Cleveland Bank that led in these discounts.

Volume of Bills Discounted for State and National Banks. Among other facts which bear on the discount operations of the Reserve Banks through this period is that the paper discounted for national banks declined much more rapidly than did paper discounted for state banks and trust companies.

VOLUME OF BILLS DISCOUNTED [62]
(000,000 omitted)

Year	*Discounted for National Banks*	*Discounted for Member State Banks and Trust Companies*
1920	$69,287	$16.034
1921	42,728	15,031
1922	16,623	5,460

This may be accounted for in part by the fact that 133 state banks and trust companies joined the Reserve System through 1921,[63] and in part by the fact that the assets of state banks

[62] *Ninth Annual Report of the Federal Reserve Board*, p. 124.

[63] *Eighth Annual Report of the Federal Reserve Board*, p. 60. In regard to the decline in discounts for national banks the Board wrote the author as follows:

> The decrease in discounts for National Banks in 1921 as compared with 1920 was especially pronounced in the New York and Chicago districts, which account for $20,455,000,000 of the aggregate decrease of $26,559,000,000. Discounts for National Banks in these two districts in 1920 showed a substantially larger percentage of increase over 1919 than

are apt to be less liquid, more of an investment character, and therefore remain for a longer time in a frozen condition than the assets of national banks. Those who are making a drive at the present time to enlarge the membership of the System should take cognizance of the fact that the addition of banks whose assets are in a more or less unliquid condition will prove a weakness rather than a boon to the Reserve Banks. The portfolio of the Regional Banks should be of the most liquid character, consisting mainly of short-term, self-liquidating commercial paper. The better to insure that their portfolio will be of such a character, the Reserve Banks should confine their relations to institutions primarily engaged in commercial banking. This was the purpose of the provision in one of the early drafts of the bill which permitted only national banks to become members. It was felt, generally speaking, that their assets were more commercial in character than the assets of state banks and therefore with this type of member that the portfolio of the Reserve Banks would be the more liquid. To the extent that state banks join, whose assets partake of investment characteristics, the portfolio of the Reserve Banks will lose its commercial character, will be less self-liquidating, and will be less responsive to fluctuations in trade and commerce. For a portfolio of a central bank, the guardian of a nation's stock of gold and banking reserves, to develop along these lines would be disastrous. Its rates of discount and its credit policies would be less efficacious and in every way its efficiency would be impaired.

Discounts by Geographic Divisions. A very interesting table appeared in the *Ninth Annual Report of the Federal Reserve Board* reproduced on p. 423.[64] The total amount of paper discounted during 1920, 1921 and 1922 as well as the number of member banks accommodated were given by geographic divisions.

Whereas the greatest amount of paper was discounted by banks in the Middle Atlantic, East North Central and New England divisions, it was in the West South Central, and in the South Atlantic that we find the greatest percentage of member banks discounting. In brief, it was banks in the agricultural sections which required the greatest assistance. It might be added that much of the discounting in the Middle Atlantic division arose from the fact that Eastern banks were lending assistance to banks in the farming sections of the country.

did National Banks in other districts or State bank and trust company members and consequently a larger decline in 1921 was to be expected.

[64] P. 121.

VOLUME OF BILLS DISCOUNTED, BY STATES; NUMBER OF MEMBER BANKS IN EACH STATE, AND NUMBER ACCOMMODATED THROUGH DISCOUNT OPERATIONS, 1922, 1921, AND 1920.

	Number of member banks on Dec. 31			*Number accommodated during—*			*Total amount of paper discounted* (000 omitted)		
	1922	1921	1920	1922	1921	1920	1922	1921	1920
United States	9,916	9,841	9,628	6,956	7,415	6,941	22,082,887	57,759,128	85,320,874
Geographic divisions:									
New England	439	449	450	339	352	354	2,276,633	4,488,110	4,960,412
Middle Atlantic ...	1,820	1,796	1,766	1,236	1,178	1,134	12,422,245	36,492,572	57,985,933
East North Central	1,795	1,795	1,760	1,221	1,240	1,130	2,156,040	4,906,757	6,736,742
West North Central	1,830	1,826	1,816	1,304	1,480	1,430	749,919	2,573,793	4,274,116
South Atlantic	937	909	852	703	750	646	1,651,636	3,356,492	4,059,915
East South Central	440	426	409	260	307	273	680,626	1,215,695	1,656,772
West South Central	1,380	1,319	1,284	1,005	1,120	1,037	477,098	1,632,417	2,345,534
Mountain	651	682	680	523	574	549	426,817	790,360	886,761
Pacific	624	639	611	365	414	388	1,241,873	2,302,932	2,464,689

Maturity of Bills Discounted. The average maturity of bills discounted in 1920 was 13.29 days; in 1921, 13.63 days; and in 1922, 12.14 days.[65] In 1920 the average maturity varied from 7.34 days at the Federal Reserve Bank of New York to 38.85 days at Minneapolis; in 1921 from 6.99 at New York to 44.48 days at Minneapolis; in 1922 from 5.08 days at New York to 55.38 days at Dallas. The shorter maturity in New York resulted from the great preponderance of one, two, three, four and five-day advances extended to enable member banks to build up their reserves, impaired perhaps by adverse clearing-house balances, while the longer maturity throughout the West arose from the predominate amount of agricultural paper discounted. Generally speaking the average maturity in the districts located in the financial centers of the nation, in the lending Reserve Districts,[66] is much shorter than in the borrowing districts. As a consequence of this the effect of a sharp rise in the Bank rates in the former will be much quicker and more apparent than in the latter.

Number of Banks Accommodated. In the following table there is given the number of banks belonging to the Reserve System during each month of 1920, 1921 and 1922 and the number rediscounting:[67]

NUMBER OF BANKS ACCOMMODATED

	Total Number of Member Banks			*Number of Banks Accommodated, by Months*		
	1920	1921	1922	1920	1921	1922
January	9089	9637	9852	3461	5293	5350
February	9140	9668	9856	3338	5107	4847
March	9196	9696	9873	3670	5320	4701
April	9246	9726	9904	4175	5568	4738
May	9303	9747	9909	4642	5632	4636
June	9366	9775	9927	4948	5745	4436

[65] *Ninth Annual Report of the Federal Reserve Board*, p. 126.

[66] See p. 435.

[67] Sources: *Seventh Annual Report of the Federal Reserve Board*, p. 219. *Eighth Annual Report of the Federal Reserve Board*, p. 230. *Ninth Annual Report of the Federal Reserve Board*, pp. 120 and 147.

In 1920 and 1921 the number of member banks is given as of the fifteenth of the month, in 1922 as of the end of the month.

NUMBER OF BANKS ACCOMMODATED

	Total Number of Member Banks			*Number of Banks Accommodated, by Months*		
	1920	1921	1922	1920	1921	1922
July	9421	9779	9930	4858	5607	4167
August	9472	9792	9917	4780	5453	4042
September	9506	9795	9917	4758	5427	3944
October	9544	9803	9918	4952	5572	3793
November	9574	9805	9916	5275	5622	3859
December	9612	9827	9916	5551	5676	3873

The greatest number of banks, 5745, or equal to 59% of the total membership, were accommodated in June of 1921, or one month before the production of basic commodities in America had reached a minimum. From then on the number of banks rediscounting declined rapidly, reaching a minimum in October of 1922.

Rediscounting for Non-Members. Section 19 of the Reserve Act, it will be remembered, forbids member banks from acting as agents of non-members in applying for or receiving discounts from a Reserve Bank, excepting by permission of the Reserve Board. During America's participation in the war the Board had granted such authorization in the case of paper secured by government obligations. Again, in 1921, on the 27th of July the Board, in a circular letter,[68] sent to the Regional Banks, advised them that general authority had been extended member banks to rediscount eligible paper which they had obtained from non-members. In testifying before the Joint Commission of Agricultural Inquiry, Governor Harding stated [69] that this did not represent a change of policy on the part of the Board. From the beginning, he said, the position had been adhered to consistently that the Reserve Banks should discount the paper of non-member banks when offered by member banks which specialized in carrying accounts for other banks. He asserted that the permission which had always been granted these banks was, by this circular letter, extended generally. While data are not available it is probable that very little use was made of this privilege. Its value was chiefly psychological in assuring banks in the agricultural sections of a sufficiency of funds during the crop seasons. In the latter part of June 1923, Governor Cris-

[68] *Hearing before the Joint Commission of Agricultural Inquiry,* Part 13, p. 344.

[69] *Ibid.,* pp. 344–346.

singer, of the Board, announced the withdrawal of the authorization granted by this letter, stating that hereafter special permission would have to be secured from the Board for such discounts. This action was taken at the insistence of a number of member banks, who asserted that theoretically a non-member bank might enjoy the same rediscounting privileges as they did, without having to submit to the rules and regulations of membership.[70]

Attempting to prevent the funds of the Reserve Banks from reaching non-members is at best a futile task. The loans extended by the Reserve System can not be ear-marked, can not be diverted into specific channels. As Governor Strong has put it:

> But if we were to attempt to prevent the employment of the funds of the Federal reserve bank for the purpose of making loans to non-member banks; if we were to prevent member banks doing that, we would have to go into their offices and examine every loan that they made or require from them a certificate that they make no loans to non-member banks, in order that our funds might not be used for non-member purposes.[71]

All that may be prevented is the direct discounting of non-member bank paper endorsed by a member bank.

Inter-District Rediscounting. In the fall of 1919 and the spring of 1920, it will be remembered, it was Reserve Banks in the East which were forced to seek funds from the other districts. Funds were required for the financing of industrial activities and for aiding the Government in its fiscal operations. The promptness with which liquidation took place in the industrial sections of the nation enabled the eastern Reserve Banks (aside from the New York Bank) to repay their borrowings early in 1920 and to be in a position to extend accommodation to the other Reserve Banks. In fact, through the greater part of 1920 and through all of 1921 (with minor exceptions) the Reserve Banks of Boston, Philadelphia, Cleveland and San Francisco [72] made extensions of credit to the other Reserve Banks.[73]

[70] *The Commercial and Financial Chronicle,* June 30, 1923, p. 2945.

[71] *Hearing before the Joint Commission of Agricultural Inquiry,* Part 13, p. 697.

[72] While agriculture is of importance in the San Francisco district, the Reserve Bank there was not forced to borrow because the seasonal requirements of the agriculturalists come during different parts of the year, offsetting each other, and because of the fact that trade and commerce are prominent and because of the large proportion of non-borrowing bank accounts.

[73] Source: *Seventh Annual Report of the Federal Reserve Board,* p. 204. *Eighth Annual Report of the Federal Reserve Board,* p. 215.

—*Rediscounts and Sales of Bills Between Federal Reserve Banks during* 1920—

SUMMARY FOR THE YEAR, BY FEDERAL RESERVE BANKS

(000 omitted)

Discounted or purchased by Federal Reserve Bank of—	*Rediscounted or sold by all Federal Reserve Banks combined*			*Rediscounted or sold by Federal Reserve Bank of*—					
				Boston	New York		Philadelphia	Cleveland	Richmond
	Total	Discounted bills	Purchased bills	Purchased bills	Discounted bills	Purchased bills	Discounted bills	Purchased bills	Discounted bills
Boston	1,000,557	969,884	30,673	.....	110,000	30,673	56,500	.....	370,000
New York	490,648	479,581	11,067	584	.....	.....	31,500	50	15,000
Philadelphia	179,728	144,579	35,149	.....	15,000	35,149	.....	.....	30,000
Cleveland	1,478,882	1,406,172	72,710	5,000	115,000	33,671	40,100	.....	230,000
Richmond	.....	.....	.....	.....	.....	.....	.....	.....	.....
Atlanta	57,087	52,000	5,087	5,087	25,000	.....	17,000	.....	10,000
Chicago	173,590	168,500	5,090	5,090	90,000	.....	58,500	.....	10,000
St. Louis	13,300	13,300	.....	.....	5,000	.....	8,000	.....	.....
Minneapolis	40,029	40,029	.....	.....	.....	.....	37,500	.....	.....
Kansas City	25,049	20,000	5,049	5,049	.....	.....	20,000	.....	.....
Dallas	143,000	143,000	.....	.....	5,000	.....	103,000	.....	35,000
San Francisco	71,222	23,500	47,722	.....	10,000	47,722	.....	.....	.....
Total	3,672,792	3,460,245	212,547	20,846	375,000	147,215	371,600	50	700,000

—*Rediscounts and Sales of Bills Between Federal Reserve Banks during* 1920—
SUMMARY FOR THE YEAR, BY FEDERAL RESERVE BANKS
(000 omitted)

Discounted or purchased by Federal Reserve Bank of—	Atlanta	Chicago		St. Louis		Minneapolis	Kansas City	Dallas	San Francisco
	Discounted bills.	Discounted bills.	Purchased bills.	Discounted bills.	Purchased bills.	Discounted bills	Discounted bills.	Discounted bills.	Purchased bills.
Boston	18,999	6,000	.....	133,971	.....	77,500	121,914	75,000	.....
New York	41,045	142,000	175	60,000	.....	46,000	67,025	67,511	10,258
Philadelphia	29,977	.....	.....	25,000	.....	19,000	23,102	2,500	.....
Cleveland	217,976	107,000	28,003	75,499	6,000	151,000	179,595	290,002	.....
Richmond	.....	.....	.....	.....	.....	.....	.....	.....	.....
Atlanta	.....	.....	.....	.....	.....	.....	.....	.....	.....
Chicago	.....	.....	.....	.....	.....	.....	10,000	.....	.....
St. Louis	.....	.....	.....	.....	.....	.....	.....	.....	.....
Minneapolis	.....	.....	.....	2,529	.....	.....	.....	.....	.....
Kansas City	.....	.....	.....	.....	.....	.....	.....	.....	.....
Dallas	.....	.....	.....	.....	.....	.....	.....	.....	.....
San Francisco	.....	.....	.....	12,500	.....	.....	.....	1,000	.....
Total	307,997	255,000	28,178	309,499	6,000	293,500	411,636	436,013	10,258

SUMMARY FOR 1921 BY FEDERAL RESERVE BANKS
(000,000 omitted)

Bills discounted for other Federal Reserve Banks by Federal Reserve Bank of—	*Bills rediscounted by all Federal Reserve Banks combined*	*Bills rediscounted by Federal Reserve Bank of—*											
		Boston	*New York*	*Philadelphia*	*Cleveland*	*Richmond*	*Atlanta*	*Chicago*	*St. Louis*	*Minneapolis*	*Kansas City*	*Dallas*	*San Francisco*
Boston	$204,150	.....	.....	.....	.....	$ 10,000	$39,650	.....	.....	$3,500	.....	$151,000	.....
New York	595,500	.....	.....	.....	.....	490,000	.....	.....	.....	105,500	.....	.....	.....
Philadelphia	5,000	.....	.....	.....	.....	.....	4,000	.....	.....	1,000	.....	.....	.....
Cleveland	194,503	.....	.....	.....	.....	.....	23,495	.....	.....	7,000	$9,008	155,000	.....
Richmond	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Atlanta	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Chicago	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
St. Louis	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Minneapolis	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Kansas City	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Dallas	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
San Francisco	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Total	999,153	.....	.....	.....	.....	500,000	67,145	.....	.....	117,000	9,008	306,000	.....

SALES OF BANKERS' ACCEPTANCES BETWEEN FEDERAL RESERVE BANKS DURING 1921
(000 omitted)

Date	Sold by Federal Reserve Bank of—		Purchased by Federal Reserve Bank of—				
	New York	Chicago	Boston	Philadelphia	Cleveland	St. Louis	San Francisco
Jan. 19	$ 5,006	.....	....	....	.....	....	$ 5,006
21	5,049	.....	$ 5,049	....	.....	....	....
22	10,032	.....	....	....	10,032	....	....
24	10,052	.....	....	....	.....	....	10,052
26	15,062	.....	....	....	15,062	....	....
27	5,622	.....	5,622	....	.....	....	....
Feb. 2	6,823	.....	....	$6,823	.....	....	....
28	.....	$1,000	....	....	.....	$1,000	....
Total	57,646	1,000	10,671	6,823	25,094	1,000	15,058

As shown above, through 1920 the Cleveland Reserve Bank loaned more than any of the others, discounting and purchasing nearly a billion and a half dollars worth of paper. Boston and San Francisco ranged next in order. The Banks requiring accommodation were Atlanta, Kansas City, Dallas, Richmond, St. Louis, and Minneapolis. New York, Chicago and Philadelphia were both borrowers and lenders. Through 1921 the New York, Boston, Cleveland and Philadelphia Reserve Banks extended accommodation and the Richmond, Dallas, Minneapolis, Atlanta and Kansas City Banks received it.[74] During the first few weeks in the year New York was forced to seek funds, obtaining these through the sale of acceptances.[75]

During 1920 inter-district discounts and purchases of acceptances amounted to $3,672,792,000 while in 1921 these dropped to $1,057,799,000. No inter-district rediscounting has taken place since the 9th of December 1921, when the Dallas Bank borrowed a million dollars from Boston.[76]

Recapitulation. Since May of 1920 no eastern Reserve Bank, save the New York Bank, has been required to seek accommodation. The chief borrowing banks have been located in the South and Middle West. The demands of member banks on their Reserve Banks in these districts were very heavy by reason of the "freezing" of loans, coupled with heavy seasonal agricultural demands for credit. Particularly in 1920 did these seasonal requirements tax the banking system. The corn crop was the largest ever produced, the production of cotton larger than in many year since 1914, and the wheat crop had been surpassed only five times in the history of the country.[77] The credit requirements of the borrowing districts were much less urgent in 1921 than they had been in 1920. A rapid rise in the price of cotton, engendered by the reduced size of the 1921 crop, allowed planters in the South to liquidate their loans and their banks in turn to repay their borrowings at the Reserve Banks. A larger

For a list of factors which permitted the eastern Reserve Banks to loan, see testimony of Governor Harding, in *Reviving the Activities of the War Finance Corporation,* Part I, pp. 68–69, and of Governor Strong in *Hearings before the Joint Commission of Agricultural Inquiry,* Vol. 2, pp. 594–595.

74 For a discussion of inter-district rediscounting in 1921, see the *Monthly Review,* etc., of the Federal Reserve Bank of New York, for March 1922, p. 12.

75 *Eighth Annual Report of the Federal Reserve Board,* p. 217.

76 All inter-district rediscounts were retired by December 15, 1921. (Correspondence with Federal Reserve Board.)

77 *Seventh Annual Report of the Federal Reserve Board,* p. 3.

exportation of cereals, aided to some extent by the War Finance Corporation, assisted in this process in the grain states.

The borrowings of the New York Bank during and after the spring of 1920 were occasioned by the withdrawal of funds deposited by interior banks with member banks in New York, and by reduced participations on the part of interior banks in stock exchange loans. During the speculative boom of 1919 there had been a concentration of funds in New York. The balances of out-of-town correspondents with the daily reporting banks of New York and street loans placed for their account rose from 978 millions of dollars on January 3, 1919, to 1518 millions on the 14th of November. Subsequently this declined, by June of 1921, to 934 millions.[78] It was the withdrawal of these moneys, recorded in the transactions of the gold settlement fund, which forced the Federal Reserve Bank of New York to borrow. Because funds are deposited by interior banks in New York banks, or loaned for them on the stock exchange, the discount operations of the New York Reserve Bank are reflective of credit expansions and contractions throughout the interior. Similarly, fluctuations in the discounts of the Chicago Reserve Bank will be influenced by developments in the agricultural and stock-growing sections.

Technique of Inter-District Rediscounting. Inter-district rediscounting was carried on by the Federal Reserve Board in a very mechanical manner. All applications for funds on the part of the Reserve Banks were approved, none were refused.[79] Surplus funds of the lending Reserve Banks were simply shifted about in such a manner as to maintain the reserves of each Regional Bank above the legal minimum. This is brought out in the tables on pp. 433–434.[80]

Had it not been for the inter-district shifting of funds the reserve percentage at the New York Reserve Bank would have fallen to 34.2% ; at Richmond to 25.6% ; at Atlanta to 17.0% ; at Chicago to 35.3% ; at St. Louis to 13.9% ; at Minneapolis to 18% ; at Kansas City to 15.9% ; and at Dallas to 9.2%. Assuming that these reserve percentages were those actually held against Reserve notes, the Board would have been forced by the Act to impose the following taxes (see p. 435) upon the uncovered notes, a tax which must have been added to the Bank rate.[81]

[78] *Report of the Joint Commission of Agricultural Inquiry,* Credit, Part II, p. 137.

[79] See testimony of Governor Harding, *Hearing before the Joint Commission of Agricultural Inquiry,* Vol. II, p. 290.

[80] *Eighth Annual Report of the Federal Reserve Board,* p. 44.

[81] For schedule of taxes see Willis, *The Federal Reserve System,* p. 855.

ACTUAL AND ADJUSTED RESERVE RATIOS OF FEDERAL RESERVE BANKS, 1920–21 [1]

(Percentages are based on end of month figures.[2])

	Boston			*New York*		*Philadelphia*		*Cleveland*		*Richmond*		*Atlanta*	
	System	*Actual*	*Adjusted*	*Actual*	*Adjusted*	*Actual*	*Adjusted*	*Actual*	*Adjusted*	*Actual*	*Adjusted*	*Actual*	*Adjusted*
1920													
January ...	44.5%	42.6%	42.3%	40.3%	35.3%	40.6%	30.4%	48.3%	55.4%	44.6%	41.9%	48.5%	56.0%
February ..	42.5	50.5	47.3	37.6	34.3	40.2	29.0	44.9	48.6	44.0	44.0	44.2	52.2
March	42.7	45.0	50.4	39.1	36.9	40.8	30.5	45.8	54.8	42.0	33.7	48.3	50.0
April	42.4	53.1	58.9	39.9	45.7	40.3	34.3	50.5	61.3	43.2	29.0	41.4	41.4
May	42.7	50.1	55.4	41.8	46.9	40.2	40.2	51.5	61.4	40.2	25.6	40.4	36.2
June	43.6	56.8	61.9	39.2	42.8	45.0	45.0	51.1	63.1	41.7	27.0	40.6	36.4
July	44.2	56.5	68.7	40.4	40.8	44.8	47.7	56.5	70.9	41.9	28.6	40.8	29.3
August	43.2	53.1	69.4	38.5	35.9	48.3	51.6	48.7	74.3	46.6	33.0	40.4	23.5
September .	43.6	51.4	66.2	43.7	42.9	48.5	58.2	48.3	78.6	42.5	29.3	40.5	17.0
October ...	43.1	49.6	70.2	39.1	35.1	51.3	61.2	51.9	80.2	45.5	38.2	40.5	24.2
November ..	44.4	55.0	61.9	40.8	39.2	49.6	55.4	56.5	79.4	43.2	38.0	40.1	21.2
December ..	45.4	55.3	59.5	40.0	39.5	54.2	58.7	59.1	75.9	45.4	40.3	40.7	24.8
1921													
January ...	49.0	64.4	68.6	37.9	34.2	58.9	60.2	66.7	78.5	48.0	48.0	42.2	33.9
February ..	50.1	62.4	62.7	40.5	39.0	55.9	57.0	68.9	74.1	48.6	48.6	41.8	41.8
March	52.0	59.6	59.6	55.4	55.3	52.9	52.9	67.5	71.0	41.9	41.9	41.5	41.5
April	54.8	72.0	73.3	55.0	56.2	55.2	55.2	68.2	69.1	42.8	35.0	45.3	45.3
May	58.1	68.9	70.1	61.8	63.8	52.0	52.0	70.8	70.8	43.2	35.0	46 8	46.8
June	60.8	72.4	75.0	71.2	74.1	57.5	57.5	65.5	65 5	45.2	31.0	44.4	44.4
July	63.7	77.4	81.2	73.5	76.4	63.5	63.5	66.5	68.8	42.5	27.6	41.6	40.6
August	66.8	71.4	79.0	75.5	78.1	66.9	66.9	71.4	73.2	40.1	27.7	40.8	35.6
September .	68.8	75.9	82.3	81.5	83.6	70.2	70.2	69.0	72.1	44.7	29.7	40.4	31.0
October ...	70.6	79.5	84.8	81.9	83.3	70.0	70.0	70.0	71.6	46.6	37.4	40.3	32.1
November ..	72.7	76.3	79.4	83.6	84.0	74.6	74.6	74.8	74.9	43.7	41.1	40 5	37.9
December ..	70.2	78.0	78.0	78.8	78.8	71.2	71.2	69.0	69.0	42.6	42.6	43.3	43.3

[1] Ratio of cash reserves to note and net deposit liabilities, January, 1920–February, 1921; ratio of cash reserves to note and total deposit liabilities since March, 1921.

[2] For 1920 the figures are for last Friday of each month; for 1921, for last day of each month.

Actual and Adjusted Reserve Ratios of Federal Reserve Banks, 1920–21 [1]

(Percentages are based on end of month figures.[2])

	Chicago		St. Louis		Minneapolis		Kansas City		Dallas		San Francisco	
	Actual	Adjusted	Actual	Adjusted	Actual	Adjusted	Actual	Adjusted	Actual	Adjusted	Actual	Adjusted
1920												
January	50.3%	57.3%	48.9%	49.8%	50.2%	50.2%	49.6%	49.6%	50.2%	62.6%	40.3%	41.3%
February	44.1	48.5	43.0	43.0	48.4	51.4	47.0	52.2	45.9	64.0	49.5	45.6
March	41.3	42.3	39.3	33.2	48.3	56.1	45.3	46.3	52.8	59.5	49.9	52.0
April	40.2	35.3	40.2	18.5	39.4	30.7	41.6	32.9	40.5	38.1	42.4	40.1
May	39.9	37.5	40.1	13.9	41.0	25.8	40.7	33.1	40.8	30.2	42.2	42.9
June	40.0	36.7	41.9	27.8	41.1	21.2	41.1	33.9	41.4	37.4	52.0	52.1
July	40.7	39.4	42.3	26.3	40.4	29.3	39.7	26.8	40.5	17.9	46.8	52.3
August	43.0	42.0	41.6	24.8	40.0	22.8	40.7	28.3	39.9	10.8	44.8	49.2
September	39.1	35.3	40.2	21.0	39.1	22.2	41.3	18.4	39.8	10.0	40.3	42.5
October	40.3	39.4	40.4	21.6	39.2	18.1	40.3	15.9	39.6	13.5	44.9	45.0
November	40.0	40.0	41.3	34.9	39.5	18.0	40.2	24.4	40.3	18.9	44.9	46.8
December	40.4	40.4	44.5	44.5	39.8	27.7	41.4	25.2	41.8	17.5	49.3	51.1
1921												
January	50.5	50.5	50.9	50.9	40.6	38.2	41.0	41.0	40.6	23.5	53.8	58.2
February	52.3	52.3	54.9	54.9	43.5	43.5	48.0	48.0	38.8	27.0	51.2	53.3
March	41.7	41.7	52.2	52.2	46.6	46.6	43.3	43.3	39.8	26.5	53.3	53.3
April	49.5	49.5	56.2	56.2	41.8	40.0	43.3	43.3	39.3	30.5	55.0	55.0
May	56.6	56.6	55.8	55.8	41.7	29.8	51.2	51.2	40.8	35.0	54.8	54.8
June	53.5	53.5	50.6	50.6	40.8	28.0	50.7	50.7	38.9	28.7	58.8	58.8
July	60.8	60.8	53.0	53.0	38.1	25.6	53.1	53.1	40.1	15.7	61.1	61.1
August	70.0	70.0	58.6	58.6	39.5	24.5	59.9	59.9	40.1	9.2	64.6	64.6
September	67.8	67.8	58.4	58.4	41.3	39.3	50.8	50.8	41.2	22.4	66.7	66.7
October	71.0	71.0	66.7	66.7	39.7	36.2	50.4	50.4	41.5	30.1	71.6	71.6
November	74.2	74.2	63.5	63.5	47.3	47.3	48.6	48.6	39.3	35.7	79.3	79.3
December	69.9	69.9	64.8	64.8	58.5	58.5	50.5	50.5	43.1	43.1	76.5	76.5

1 Ratio of cash reserves to note and net deposit liabilities, January, 1920–February, 1921; ratio of cash reserves to note and total deposit liabilities since March, 1921.

2 For 1920 the figures are for last Friday of each month; for 1921, for last day of each month.

Federal Reserve Bank of	*Date*	*Reserve Ratio*	*Tax*	*Bank Rate on 90-day Paper Would Have Been*
New York	Jan., 1921	34.2%	1%	7% + 1% = 8%
Richmond	Sept., 1920	25.6	5½	6 + 5½ = 11½
Atlanta	May, 1920	17	11½	6 + 11½ = 17½
Chicago	Apr., 1920	35.3	1	6 + 1 = 7
St. Louis	May, 1920	13.9	13	6 + 13 = 19
Minneapolis	Nov., 1920	18	10	7 + 10 = 17
Kansas City	Oct., 1920	15.9	11½	6 + 11½ = 17½
Dallas	Aug., 1921	9.2	16	6 + 16 = 22

The shifting about of the gold stock of the Reserve System prevented the Bank rates from rising to the heights given in this table. Indeed, had the Bank rate risen to 22%, as it would have in Dallas, the results would have been calamitous. Even though we should not expect this we should expect the average Bank rate in the borrowing districts to stand above those in the lending.

Comparison Between the Bank Rate in the Lending and in the Borrowing Districts. In the accompanying table we have tabulated the Bank rates, as measured by annual rates of earnings on discounted bills, prevailing at the purely lending and the purely borrowing Reserve Banks:[82]

Lending Reserve Banks:	*On Discounted Bills Annual Rates of Earnings* 1920	1921
Boston	5.91%	6.03%
Philadelphia	5.48	5.49
Cleveland	5.88	5.85
San Francisco	5.79	5.82
Borrowing Reserve Banks:		
Richmond	5.69	5.92
Atlanta	5.77	6.12
Minneapolis	6.22	6.48
Kansas City	6.05	6.06
Dallas	5.67	6.25

[82] *Ninth Annual Report of the Federal Reserve Board*, p. 48.

In 1920 the Richmond, Atlanta and Dallas Banks, all heavy borrowers, had a lower Bank rate than that prevailing at the Boston, Cleveland or San Francisco Banks, which made large extensions of credit to the other Reserve Banks. In 1921 the Bank rates at all the borrowing Reserve Banks were higher than those at the lending, save that the Bank rate in Boston exceeded that of the Richmond Bank. The Board should insist that rates at the borrowing Reserve Banks be maintained at a higher level than those at the lending banks. This was the case in 1921 with the exception of the Richmond Reserve Bank. Any other policy would be most illogical.

Policies to be Followed in Inter-District Rediscounting. What policy should the Board follow with respect to inter-district rediscounts? Should it grant all applications as it has up to the present time, or should a limit be imposed? Is it wise that surplus funds from the East should be shifted in vast amounts to the West? The Federal Advisory Council has set itself on record as unanimously opposed to the imposition of a limit upon inter-district rediscounting. In reporting on the subject it stated:[83]

> The council's opinion is that no limit should be placed on the amount which one Federal Reserve Bank may rediscount with other Federal Reserve Banks. The Federal Reserve System is one and indivisible and not twelve independent districts. The council holds the view that the Board should exercise its own discretion and should not limit its own power of action by binding itself to definite rules, which, with conditions varying in the several districts and strongly fluctuating at this time, might fit one condition and one period but might prove embarrassing in others. The council believes, however, that where Federal Reserve Banks are fairly regular rediscounters with other Federal Reserve Banks their discount rates should not be permitted to be lower than those prevailing with the Federal Reserve Banks granting the rediscounts.[84]

The practice of imposing no restraints on inter-district rediscounting and sales of acceptances is permeated with many dangers. A strict oversight must be exercised lest one Reserve Bank, in expanding its loans and discounts, nullify the deflation policy of another Reserve Bank. Inter-district rediscounting should be confined to emergencies and should not be

[83] *Eighth Annual Report of the Federal Reserve Board*, p. 682.

[84] Mr. Edmund Platt, a member of the Reserve Board, has expressed himself very emphatically as regards the idea embraced in this last sentence. See *The Commercial and Financial Chronicle*, Sept. 18, 1920, p. 1137.

allowed to develop into a continuous practice. If it occurs as a result of a seasonal need for funds the Board should insist that the lending bank be paid when this requirement shall have passed. The Bank rates at the borrowing bank should be higher than the rates at the lending bank, and at least equal to the market rates in the district in question.[85] Further, the borrowing Reserve Bank should be forced to borrow at a loss—the rate which it is forced to pay should rule above its Bank rate and should progress with the amount of the borrowings. For the Board to permit a steady drain of funds from the East to the West, to be invested in loans of a more or less permanent and fixed character would be disastrous. Any attempt that the eastern Reserve Banks might make to control credit would be immediately nullified. The System's assets would tend to become tightly frozen. Were this to come about the large banks in the East would be justified in withdrawing from the System.

Open-Market Operations of the Federal Reserve Banks. The Reserve System's holdings of acceptances declined precipitously through 1920 and the first half of 1921. On January 30, 1920, they amounted to 561 millions, and on July 31, 1921, to but 18 millions of dollars. From this low point the holdings of bills increased until on December 31, 1923, they amounted to 355 millions.[86]

[85] On March 10, 1915, the Federal Reserve Board established a rate of 3½% for paper maturing within thirty days, and 4% for paper maturing after thirty but within ninety days, when rediscounted by one Federal Reserve Bank with another. These rates were changed on May 29, 1917, to 3% for paper maturing up to ninety days. No rediscount transactions were consummated, however, until December, 1917, at which time rates on paper discounted by Federal Reserve Banks for their own member banks were higher than in the early part of the year, and accordingly rediscounts between Federal Reserve Banks were made at rates fixed when each transaction took place, having in mind the prevailing discount rates both of the bank extending and of the bank receiving accomodation. Effective September 7, 1920, however, the Board fixed a rate of 7% on paper discounted by the Federal Reserve Bank of Cleveland for other reserve banks, and effective September 13, 1920, the same rate was made applicable to all inter-Federal Reserve Bank rediscounts. The rate was changed to 6½% on June 23, 1921; and to 5½% on November 3, 1921. (*Discount Rates of the Federal Reserve Banks,* p. 30.)

[86] Source of table:

Federal Reserve Bulletin, 1923, pp. 629, 736, 839, 841, 858, 1150, 1152, 1228, 1313; 1924, pp. 59, 131.

Ninth Annual Report of the Federal Reserve Board, pp. 55–56.

Correspondence with Federal Reserve Board.

Up through Nov., 1920, the figures given are for the last Friday in each

STATISTICS OF OPEN-MARKET OPERATIONS
(000,000 omitted)

Date		*Purchases of Acceptances*	*United States Securities*	*Warrants Municipal*
1920	Jan. 30	$561	$304	....
	Feb. 27	531	294	....
	Mar. 26	452	290	....
	Apr. 30	407	294	....
	May 28	419	306	....
	June 25	399	352	....
	July 30	345	325	....
	Aug. 27	322	301	....
	Sept. 24	308	298	....
	Oct. 29	298	296	....
	Nov. 26	248	321	....
	Dec. 30	256	288	....
1921	Jan. 31	164	287	....
	Feb. 28	169	283	....
	Mar. 31	119	277	....
	Apr. 30	110	267	....
	May 31	75	266	....
	June 30	40	259	....
	July 31	18	244	....
	Aug. 31	35	230	....
	Sept. 30	45	228	....
	Oct. 31	86	193	$.010
	Nov. 30	73	205	.067
	Dec. 31	145	234	.379
1922	Jan. 31	75	293	.206
	Feb. 28	93	408	.242
	Mar. 31	105	456	.102
	Apr. 29	91	587	....
	May 31	118	603	....
	June 30	161	555	....
	July 31	140	537	.003
	Aug. 31	180	507	.021
	Sept. 30	244	483	.015
	Oct. 31	258	363	.024
	Nov. 29	259	304	.024
	Dec. 30	272	436	.039
1923	Jan. 31	189	354	....
	Feb. 28	208	363	....
	Mar. 31	263	250	.041

month; for December, 1920, they are for the last Thursday; from January 1920, the figures are for the last banking day in each month.

Date	*Purchases of Acceptances*	*United States Securities*	*Municipal Warrants*
Apr. 30	$272	$185	....
May 31	259	192	$.055
June 30	206	135 (June 27)	.055 (June 27)
July 31	188	94 (Aug. 1)	.010 (Aug. 1)
Aug. 31	177	94 (Aug. 29)	.020 (Aug. 29)
Sept. 29	179	92 (Sept. 26)	.317 (Sept. 26)
Oct. 31	211	92	.317
Nov. 30	300	104	.154
Dec. 31	355	134	.051

The System's holdings of United States securities have not fluctuated to the same extent as have its holdings of acceptances. From a high of 352 millions on June 25, 1920, they declined to a low of 193 millions on October 31, 1921, and have on one occasion since then risen above 600 millions of dollars. Purchases of municipal warrants were discontinued early in 1919 and not resumed until in October of 1921. Since then these have fluctuated between a low of 3 and a high of 379 thousands of dollars.

Importance of Purchases of United States Securities. Through 1920, 1921 and 1922 purchases of United States securities accounted for well over half of the open-market opera-

Open-Market Operation of the Reserve Banks
(000,000 omitted)

	1920	1921	1922
Bankers' Acceptances	3144	1527	1949
Trade Acceptances	75	7	6
United States Securities	7988	3847	4633
MunicipalWarrants	....	.985	.176

tions of the Reserve Banks.[87] Purchases of trade acceptance[88] and municipal warrants were relatively unimportant.

As in the past the open-market operations of the Federal Reserve Bank of New York greatly exceeded those at any of the other institutions. In 1922 the New York Bank purchased 871

[87] *Ninth Annual Report of the Federal Reserve Board,* p. 116.

[88] On May 24, 1922, the Board advised the Reserve Banks that upon request it would approve of a minimum rate at which eligible trade acceptances might be purchased in the open-market, this rate to be not less than one-half of 1% above the minimum buying rate for bankers' acceptances in effect at the Reserve Banks. Eight Federal Reserve Banks requested and obtained approval of a separate minimum buying rate for trade acceptances. (*Ninth Annual Report of the Federal Reserve Board,* p. 18.)

millions of dollars of acceptances, or 44.6% of those taken by the System, and 2908 millions of dollars of government securities or 62.8% of the whole.[89] The only institutions buying municipal

Open-Market Operations of the Reserve Banks
(000,000 omitted)

	Acceptances			U. S. Securities			Municipal Warrants	
	1920	1921	1922	1920	1921	1922	1921	1922
Boston	$ 304	$212	$262	$ 553	$ 198	$ 210	....	....
New York	1697	800	871	4282	2671	2908	....	....
Philadelphia	41	92	137	357	198	162	$140	$102
Cleveland	295	88	96	879	349	214	....	....
Richmond	52	25	8	84	37	32	....	....
Atlanta	40	22	46	19	20	11	....	8
Chicago	345	138	253	848	232	597	....	....
St. Louis	36	20	34	74	46	145	....	....
Minneapolis	18	.4	....	142	6	80	89	66
Kansas City	17	6	2	128	10	85	756	....
Dallas	8	.7	33	177	4	18	....	....
San Francisco	3365	130	212	446	78	171	....	....

warrants were the Philadelphia, Atlanta, Minneapolis and Kansas City Reserve Banks.

Maturity of Purchased Bills. The average maturity of bills bought in the open-market through this period was much longer, nearly three times as long, as the maturity of bills discounted.[90]

Average Maturity of Purchased Bills

	Average	*High*	*Low*
1920	43.83 days	64.83 days (Minneapolis)	33.10 days (Boston)
1921	28.53	62.18 (Chicago)	16.85 (St. Louis)
1922	39.91	73.01 (Kansas City)	25.18 (New York)

The shorter maturity of discounted bills is accounted for by the vast amount of advances running for only a few days, made by the Reserve Banks in order that member banks might build

[89] *Seventh Annual Report of the Federal Reserve Board*, p. 173.
Eighth Annual Report of the Federal Reserve Board, p. 180.
Ninth Annual Report of the Federal Reserve Board, p. 116.

[90] Source: *Ninth Annual Report of the Federal Reserve Board*, p. 137.

up reserves which had become impaired chiefly because of adverse clearing house balances. The average maturity of purchased bills is consequently more representative of the credit period of the country.

Annual Rate of Earnings on Purchased Bills. The annual rates of earnings on bills bought in the open-market amounted to 5.66% in 1920, rose to 5.70% in 1921, and fell to 3.54% in 1922. During the same years the annual rates of earnings on discounted bills amounted to 5.88, 6.07 and 4.63%. The differential between the annual rate of earnings on discounted and purchased bills, which in 1920 amounted to .22%, increased to .37% in 1921, and to 1.09% in 1922.[91]

Purchases of Acceptances from Member and Non-Member Banks. Through these three years the greater proportion of the acceptances purchased were obtained from member banks. Strangely enough purchases from national member banks only slightly exceeded purchases from non-national member banks. While national member banks greatly outnumber non-national member banks, it should be remembered that among the non-national members are some very powerful state banks and trust companies in New York, Boston and Cleveland, which have extensive foreign dealings.[92]

HOLDINGS OF BANKERS' ACCEPTANCES
DISTRIBUTED BY CLASSES OF ACCEPTING INSTITUTIONS
(000 omitted)

Date	Member Banks		Non-Member Banks and Banking Corporations	Private Banks	Branches and Agencies of Foreign Banks
	National	Non-National			
Dec, 31, 1920	$169,387		$38,374	$24,905	$26,212
Dec. 31, 1921	60,173	50,091	13,656	12,319	8,806
Dec. 30, 1922	97,128	92,048	38,036	27,012	16,720

Acceptances Classified by Originating Transactions. Acceptances arising from foreign trade transactions greatly exceeded acceptances arising either from domestic transactions or arising to create dollar exchange.[93]

[91] *Ninth Annual Report of the Federal Reserve Board,* p. 47.
[92] Source: *Ibid.,* p. 86.
[93] *Ninth Annual Report of the Federal Reserve Board,* p. 133.

BILLS BOUGHT IN OPEN MARKET BY CLASSES
(000 omitted)

	Bankers' Acceptances			Trade Acceptances	
	Foreign	Domestic	Dollar Exchange	Foreign	Domestic
1920	$2,367,881	$711,311	$64,545	$68,876	$5,751
1921	1,019,689	368,972	138,574	7,081	85
1922	1,400,057	484,530	63,792	5,844	465

As indicated in an earlier chapter, by reason of the lack of adequate credit information, there is a real need for bankers' bills in foreign trade. In England, where the acceptance has reached its highest development, the great majority are "salt-water" bills. In the financing of domestic trade, particularly the domestic trade of the United States, there is no such need for bankers' bills.

Abuses in the Use of the Acceptance. Because there was little need for domestic acceptances and because American bankers were inexperienced the use of the acceptance, many abuses crept into acceptance practice. The abuses which characterized the use of bankers' acceptances in the years before America entered the war have been outlined. Before making a survey of the later misuse of the acceptance, it might be well at this point to recall to mind the theory of the acceptance. In accepting a bill of exchange a bank is simply substituting its credit of more general acceptability for the credit of a business man which, however reliable and ultimately cashable, is of more limited acceptability. The acceptance should not be used by banks, and was not generally employed in Europe before the war, as a subterfuge for the granting of additional amounts of credit to business men which could not be obtained as a straight loan, nor as a means of assisting speculation, nor as a mask for long-time or doubtful credit. Such, in brief, should be the principles surrounding the use of the dollar acceptance, if it is to become known throughout the world as a safe and liquid form of paper.

The banker's bill in America has not been drawn in accordance with the conditions outlined above. Its standing in the world's financial centers has been greatly impaired by misuse. Some of the abuses which crept into its use and which we have indicated earlier were: (1) the practice of banks discounting their own acceptances; (2) the renewal of acceptance credits; (3) the fact that many acceptances originated from speculation instead of commercial transactions; (4) the formation of acceptance

syndicates; and (5) the fact that acceptances were not related to specific transactions.

As time went on this state of affairs was not rectified; indeed, the misuse of the acceptance grew. Conditions reached such a pass by the close of 1917 that the Reserve Board felt called upon to issue to all Reserve Banks a general letter, dated February 7, 1918, calling attention to some of the principles which should govern acceptance practice. In brief these were: [94]

1) That banks should not discount their own acceptances.
2) That the acceptance market should be primarily reserved for strictly commercial uses.
3) That agreements by bankers to furnish funds for one or two years at a definite rate of interest against ninety day acceptances should not be countenanced.

The letter led to no material improvement. Conditions drifted from bad to worse. At the May 18, 1920, conference of the Reserve Board,[95] Governor Harding declared that a questionnaire had been mailed to some of the acceptance houses and dealers in acceptances, to ascertain whether the majority of acceptances were really self-liquidating or whether they partook of the nature of a fixed loan. He added that the domestic acceptance was misused, that it had been employed by banks as a means of granting credit in excess of the limitations of Section 5200 of the Revised Statutes, and that acceptances had been granted against warehouse receipts where there was no intention of sale. In the *Federal Reserve Bulletin* for June 1920, the Board, in commenting upon the discussions held by the American Acceptance Council covering the acceptance situation, stated: [96]

Adoption of the established European methods of creating and trading in acceptances was advocated as the best means of avoiding abuses growing out of the present situation. The discussion has developed the fact that at the present day there are considerable abuses both in banking practice with reference to acceptances and in the present plan of practically treating them as merely a direct addition to the accepting bank's loaning power. It emphasizes once more the need of drawing the essential distinction between the sale of the bank's credit which is represented by the acceptance

[94] *Federal Reserve Bulletin,* 1918, pp. 257–260.
[95] Pp. 56–57.
[96] P. 560.

and the process of actual or direct discounting which is represented by the deposit operation. It is the practice of many banks to regard the acceptance as an addition to their lending power—a means, therefore, of enlarging or overpassing the limits set by law with respect to lending ability, which has given the acceptance in not a few minds an unwarranted aspect as a means of pushing still further the credit inflation which is recognized as a very general evil in existing conditions. Early rectification of banking practice with regard to acceptances is considered necessary as an element in the general process of controlling and reducing the volume of unnecessary or undesirable credits. The acceptance situation at the present moment, however, has a special bearing in connection with the export trade. British banking institutions have allowed themselves to accept upon a very much larger and less restrained basis than that which was adopted by them before the war, and in some cases the acceptances of the greater banks of deposit in London now run to twice their capital and surplus, whereas before the war they were well below the level of their capital. It is the opinion of observers that this greater freedom of accepting in Great Britain is due to a desire on the part of banks to reëstablish their hold upon financial business and foreign trade, while American bankers are of the opinion that in order to keep their share of the business it is necessary that they should have a somewhat equal degree of freedom in the use of this kind of paper. The competitive struggle for foreign trade is in this respect, as in many others, therefore, in conflict with the dictates of sound control of credit.

The most scathing arraignment of acceptance practice in America is the following report submitted in June of 1922 by a committee of national bank examiners to Comptroller of the Currency Crissinger:[97]

> Your committee No. 1 submits its report upon improvement of the character of acceptances by national banks and a discussion of bad practices which have been found.
>
> The new regulations [issued in March, 1922] which have been issued by the Federal Reserve Board in connection with the use of bankers' acceptances covering exports and import transactions emphasize the necessity of more carefully considering the basis upon which acceptance credits are being granted by the various member banks. In spite of the comprehensive regulations issued

[97] *The Commercial and Financial Chronicle*, June 24, 1922, pp. 2777–2778.

by the Federal Reserve Board regarding this phase of banking practice, there have been numerous and flagrant violations upon the part of the large as well as the small banks. The duty of strict supervision of the underlying principles upon which national banks grant their acceptance facilities devolves to a very great extent upon the national bank examiners, and special attention should be paid to that part of the examination, to see that not only the letter but the spirit of the law is carried out. It might be helpful to point out some of the more common abuses of the acceptance privilege which have been met with recently in the examination of national banks.

Perhaps the most frequent abuse in connection with granting acceptance facilities against import and export transactions is found in the continued renewals given by some banks to their customers, aggravated to a considerable extent by the difficulties which have arisen in American foreign trade during the past two years. When the Federal Reserve Board announced its intention of showing greater leniency toward rediscounting by the Federal Reserve banks of renewals, in connection with transactions effected by the worldwide depression in business, many banks took advantage of this to too great and unintended an extent, and advances which were originally made by means of acceptance credits, but which should have long since been either liquidated or turned into a direct bank loan, were carried along by the banks by means of continued renewals of acceptances. A national bank should not commit itself regarding renewals of acceptances at the time of the opening of the credit. Each application for a renewal should be judged upon its own merits at the maturity of the acceptance. It is found, however, that some banks have agreed to one or more renewals at the time of the opening of the credit. There have also been a number of cases where acceptances have been renewed as many as five or six times against imports or exports of both raw materials and finished products. The tendency in such cases is for the bank to furnish working capital to concerns by means of acceptance credits rather than by making them a direct loan.

Some banks have granted acceptance facilities to American exporter against their foreign bills, which have been lodged with them for collection. This method has in some cases been abused through the continued renewals of such acceptances in spite of the fact that the collections upon which they were based had been dishonored, extended or returned because of non-payment. All of these acceptances should have been retired at maturity and a direct advance secured from the bank, if necessary, to finance the delay.

There has even been one case of a bank, which after finding that payment was delayed on various exports bills which they had discounted for one of their customers, requested him to put them in funds by drawing a ninety-day bill on the bank, which was accepted and discounted, thus wiping out the debit in the direct advance account.

In the recent Cuban crisis there were many instances of too liberal renewals of acceptances in connection with various sugar credits. In some cases the credit was in force from the time that the sugar cane was growing until long after the arrival of the refined sugar in America. The "dead season" financing has proved to be particularly objectionable. Practically all of the so-called "sugar credits," in which most of the large accepting banks participated, were subject to a considerable amount of criticism as to the method by which the collateral was handled, particularly while the sugar was in Cuba. There was no attempt made in connection with these credits at the time of the various renewals to adequately reduce the amount of the acceptances outstanding to conform to the actual marketable value of the sugar held. Although the sugar was not really being financed by means of acceptances for a speculative purpose, still, the banks enabled large amounts of sugar to be kept off the market while stocks that were being held and which were not being financed by the acceptance credits were disposed of in the market.

Some member banks have not taken definite steps in connection with granting acceptance facilities against export transactions to assure themselves that there were actual and definite shipments involved. They have thought that it was sufficient to have a general understanding that the proceeds of an acceptance would be used for the financing of shipments of merchandize between any particular countries. Also that it was quite in order to grant acceptance credits with continued renewal to finance continuous shipments of raw materials imported into the United States. This financing should more properly have been taken care of as a direct borrowing proposition rather than by means of continuously renewed acceptances.

There have also been instances where acceptance credits have not been granted directly to the exporter or importer, but to corporations which have used the funds thus obtained for the purpose of financing the foreign business of their customers.

In a general way the abuses which have come up in connection

with the granting of acceptance facilities against export and import transactions apply in the case of credits governing domestic acceptances. In these credits we again meet a number of cases where there have been excessive renewals; where the banks have financed the carrying of goods for a considerable period of time if not for the speculative holding at least for the maintenance of prices above what would otherwise be the real economic value; and where little regard has been paid in the case of renewals to the depreciated value of the collateral against which the acceptances were made.

There have been instances where domestic acceptances have been given with practically no attention paid to the question of the accepting bank being secured during the life of the acceptance. As an instance of this one bank accepted drafts drawn against crude and refined oil in storage on their customer's property or in his pipe lines.

Domestic acceptance credits have also been used for the purpose of securing continued finance. An example may be mentioned where a bank accepted time bills drawn upon them secured by warehouse receipts covering cotton in warehouses. These receipts were deposited by the bank with a correspondent in the town where the warehouse was located with instructions to permit substitutions allowing their customers to receive the documents against trust receipt. This resulted in the collateral being continually changed so that the accommodation was really in the nature of a permanent loan.

In another case acceptances were made for the account of a cotton factor who at the time of the acceptance pledged and deposited warehouse receipts and signed contracts of sale with a bank. The amount of the acceptances included his profit on the transaction and no definite time for the taking up of the cotton by the purchaser was agreed upon. As the acceptances were renewed on a falling market for cotton no effort was made to have the amount of the acceptances conform to the real value of the cotton.

In one instance a bank was accepting against a domestic shipment when the goods were being transported across the city by truck; a trip requiring about thirty minutes.

A flagrant misuse of acceptances may be mentioned where a firm desired to purchase some furs from another concern and wrote a letter to a bank stating that it was holding the furs at their disposal and induced the bank to accept their time draft on them.

With the money secured from the discount of the bank's acceptance the furs were actually secured and gradually sold during the life of the acceptance.

There have been instances of some misconceptions arising in connection with the interpretation of the Federal Reserve Boards definition of a readily marketable staple. One bank stretched this definition to include bristles and brushes.

In another case watch parts were construed as staples and in still another case acceptances were executed against dolls' heads in storage.

Another unwarranted abuse has been met where acceptances have been given for the purpose of securing overdrafts. Acceptances have also been executed by the same bank for the financing of the building of a steamship in the United States for foreign owners.

The above is a summary of the most common abuses of acceptances found in the recent examinations of national banks. In view of the excellent material which has been issued by the Federal Reserve Board and the American Acceptance Council on the correct method of financing domestic and foreign business by means of acceptances, it would be quite useless to reiterate the clear and concise suggestions made by them. In fact, during the past seven years there has not been a subject in banking practice which has received as much publicity as that of the acceptances. In spite of this, scarcely an examination is made of one of the larger accepting banks without finding some violations of the intent and purpose of the Federal Reserve Act in connection with acceptances. It is very difficult for the Federal Reserve banks to discriminate between acceptances which are drawn in accordance with the law and which are not when member bank acceptances are offered to them for rediscount. Furthermore, it is extremely awkward, if not impossible, for them to make inquiries regarding the transaction actually behind an acceptance when the bill is presented to them for rediscount through a third party, as it would necessarily have to be.

Perhaps the most practical method of remedying the situation is to have more attention paid by the bank examiners to a bank's acceptance activities. A study should be made by a fully qualified member of the bank examiner's force of each acceptance credit, and he should satisfy himself that the bank is entirely familiar with all of the details regarding the business, and especially that the underlying transactions will liquidate the credits within a reasonable length of time. The examiner should assure himself that there is a responsible officer in each bank who is thoroughly con-

versant with the law and regulations governing acceptances and any changes therein. Particular inquiry should be made in the case of all renewals to ascertain that the transaction is still alive and still forms a proper basis for being financed by means of acceptances. Above all, an earnest endeavor should be made to obtain the active co-operation of the bank officials as regards the placing of national bank acceptances upon a correct basis.
(Signed) D. C. Borden, T. C. Thomas, H. W. Scott, L. K. Roberts.

While the instances cited were perhaps the most flagrant cases, there is no doubt, nevertheless, that the acceptance was misused. In order that the abuses prevalent in acceptance practice might be eliminated we should expect the Federal Reserve Board to revoke those of its rulings which had served to broaden the use of the acceptance and to revert to its early regulations. This step would of necessity have to be taken if the acceptance were to be more of a commercial and less of a finance bill. The Board acted in an exactly opposite manner. In December of 1922 its acceptance regulations were broadened to allow Reserve Banks to purchase acceptances with maturities not in excess of six months drawn by growers or by coöperative marketing associations composed exclusively of growers of staple agricultural products. This ruling was promulgated, so the Board affirmed, to assist in the orderly marketing of agricultural products.[98] In March the Board revoked its former elaborate regulations covering purchases of acceptances by the Reserve Banks growing out of the importation and exportation of goods and delegated such control and oversight to the Reserve Banks themselves.[99] In explanation of this innovation the Board declared that detailed regulations were no longer necessary, as American banks had had considerable experience in the granting of acceptance credits. Further, they declared that the ruling would facilitate foreign trade. It is true that American banks had had some experience, but most of this unfortunately had been of the wrong type.

The Question of a Discount Market. The System's efforts to build up a discount market in New York have been disappointing. The Reserve Banks have given faithful support to the acceptance, have been ready to absorb all the bills which

[98] *Ninth Annual Report of the Federal Reserve Board,* pp. 253-254.
[99] *Ibid.,* pp. 249–253.

were not taken by the investing market,[100] and yet the market has not made the gains anticipated. The competition of the stock market for funds, intensified by the practice of daily settlements, the competition afforded by certificates of indebtedness and by Treasury notes exempt from taxes, the competition of London banks in keeping acceptance rates low, and the selfishness of large banks, which desired to retain the acceptance business themselves and prevent small banks from putting out their acceptances, has prevented this. The adoption of a scheme for term settlements on the Stock Exchange [101] and the flotation of taxable securities by the Government are reforms which should be made and which would materially aid in the building up of a discount market in New York. By reason of the widespread abuse of the bankers' acceptance and the unwillingness of the majority of commercial banks to do their bit in the development of the discount market, the Reserve Banks should cease giving acceptances preferential treatment. All but those which can meet the strictest credit tests should be purchased and discounted at the rates prevalent for commercial paper.[102] The discount market should no longer, as has been the case in the past, be artificially supported by the Reserve Banks. The dependence of the acceptance market upon the Reserve Banks is shown in the table on p. 451.[103]

The time has come when the acceptance market should be made to stand on its own feet. The Federal Reserve Banks should not, as the Advisory Council urges, buy acceptances aggressively,[104] but should purchase only those of good credit standing and to an amount they deem expedient in the light of contemporary economic events. In the upward sweep of the cycle purchases should be curtailed while on the downward sweep the Reserve Banks should follow a more liberal policy.

[100] See *Seventh Annual Report of the Federal Reserve Board,* p. 382.

[101] This is urged by Governor Strong in testifying before the Joint Commission of Agricultural Inquiry. See *Hearings before,* etc., Part 13, p. 637. See, also, statement by Mr. Pierre Jay, of the Federal Reserve Bank of New York. (*The Commercial and Financial Chronicle,* April 3, 1920, p. 1368.)

[102] This was urged by Mr. Forgan of Chicago at the May 18, 1920, conference, p. 56.

Preferential rates established during and since 1920 on bankers' acceptances discounted for member banks apply only to acceptances presented for rediscount by a bank other than the acceptor, the commercial paper rate being applicable on acceptances rediscounted by the acceptor. (*Discount Rates of the Federal Reserve Banks,* p. 31.)

[103] *Ninth Annual Report of the Federal Reserve Bank of New York,* p. 21

[104] *Ninth Annual Report of the Federal Reserve Board,* pp. 410 and 421.

End of Year	Owned by Federal Reserve Bank of New York	Owned by All Federal Reserve Banks	Estimated Amount Outstanding	Percentage Owned by All Federal Reserve Banks to Estimated Amount Outstanding
1916.....	$ 41,457,000	$127,497,000	$ 250,000,000	51.0
1917.....	148,125,000	275,366,000	450,000,000	61.2
1918.....	69,323,000	303,673,000	750,000,000	40.5
1919.....	191,312,000	585,212,000	1,000,000,000	58.5
1920.....	109,902,000	255,702,000	1,000,000,000	25.6
1921.....	47,313,000	114,240,000	600,000,000	19.0
1922.....	45,789,000	246,293,000	600,000,000	41.0
1923.....	90,052,000	336,415,000	650,000,000	51.8

As illustrative of the fact that the growth of the acceptance during the war period was largely of a mushroom character, and was the result of the absence of foreign competition, a comparison might be made between fluctuations in the amount of commercial paper and of acceptances outstanding. As reported by a number of dealers (varying from twenty-six to thirty) to the Federal Reserve Bank of New York, the paper dealt in by commercial paper houses reached a maximum of 1296 millions of dollars in January 1920, declined to 663 millions by December of 1921, and had by the middle of 1923 increased to 870 millions. The increase from the low point has been about 31%. The amount of bankers' acceptances, on the other hand, reached the billion dollar mark during 1919 and 1920, fell later to 600 millions, a decline of 40% and has not as yet advanced materially from this low point. If the dollar draft is to become an attractive investment for surplus foreign and domestic capital its liquidity and safety must be beyond reproach. American banks in granting acceptance credits must follow those principles and practices which contributed to the development of the London discount market. Deviations from sound practice will but impair the standing of the market.

Comparative Importance of the Discount and Open-Market Operations of the Reserve System. Prior to 1917 the open-market operations of the Reserve Banks were of much greater importance than their discount operations. Through this period member banks had not been forced to rediscount. During the war, by reason of the fiscal policies of the Government, the re-

discounts of the System grew to vast proportions. Their open-market operations were dwarfed. Through 1920 and 1921 the discount operations of the Reserve Banks, as during the war period, were still large relative to their open-market operations. Beginning in 1922, however, their open-market operations increased in importance and amounted to nearly a fourth of their total investments.

Discount and Open-Market Operations of the Reserve Banks

	I Bills Discounted	II Investments in Open Market (000,000 omitted)	III Percent of II to I + II
1920	85,321	11,206	11.6%
1921	57,759	6,366	9.9
1922	22,083	6,764	23.4

Credit Curves of the Federal Reserve Banks and of the Member Banks. In the following chart is depicted the credit curves of the Reserve Banks and of member banks, comparing the total earning assets of the System with the total loans and investments (including rediscounts with the Federal Reserve Banks) of the reporting member banks. The fluctuations of these items we have represented by index numbers with the base equal to the average of the weekly figures for 1919.[105]

It will be noted that through 1919, 1920 and 1921 the earning assets of the Reserve Banks were much more reponsive to business changes than the loans and investments of member banks. Thus the index number, reflective of changes in the earning assets of the Reserve Banks, rose from eighty-six in January 1919, to one hundred and thirty-four in October 1920, and then fell to forty-seven in January of 1922. The loans and investments of the reporting member banks rose from a minimum of ninety-two to a maximum of one hundred and fourteen and later fell to ninety-seven. The range of variability in this index, then, was much less than in that representing the earning assets of the Reserve Banks. The Board claimed that this was due to:

1) The fact that the discounts of the Reserve Banks represent increments and decrements in the total supply of credit and that the loans of member banks are of a more permanent character.

[105] See *Eighth Annual Report of the Federal Reserve Board*, pp. 3–11; also, Miller, *Curves of Expansion and Contraction, 1919–1921*.

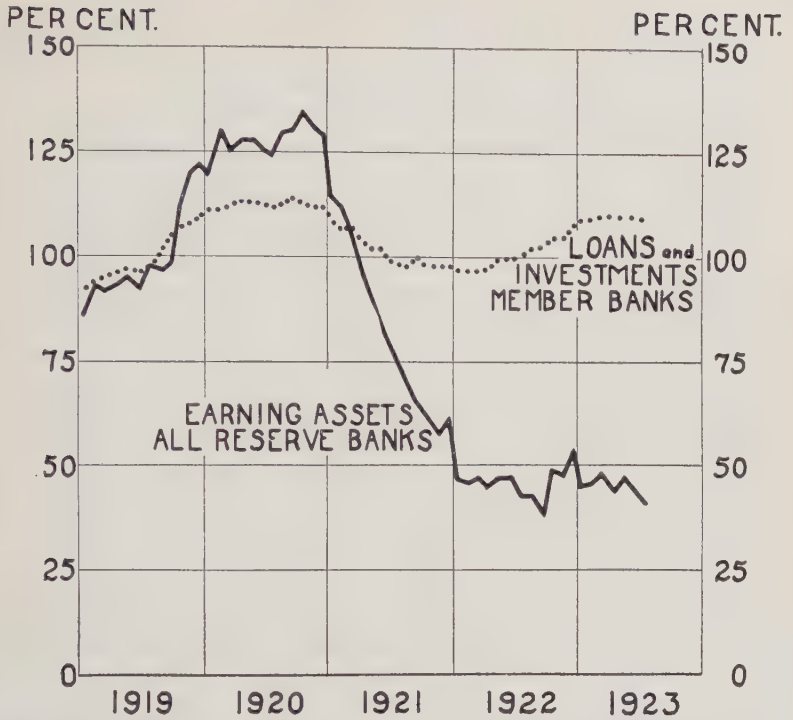


CHART XXIV: FLUCTUATIONS IN THE LOANS AND INVESTMENTS OF MEMBER BANKS (INCLUDING REDISCOUNTS WITH THE RESERVE BANKS) COMPARED WITH THE FLUCTUATIONS IN THE EARNING ASSETS OF ALL THE RESERVE BANKS.

In time of need, the Board explained when the ordinary supply of credit is inadequate, banks resort to the credit facilities of the Reserve Banks. At such periods the resources of the Reserve Banks supplement those of member banks.

2) The "freezing" of a large proportion of member bank credit through 1920 and 1921, which made deflation much more gradual than it would otherwise have been.

During 1922–1923 it will be noted that the earning assets of the Reserve Banks increased proportionately less than did the loans and investments of member banks, and, unlike the previous period of expansion, they were not so reflective of changes in business conditions. The reason is that member banks through 1922, as in 1915 and 1916, expanded upon the basis of gold imports and not upon rediscounts, as in 1919. The imports of gold in 1921

had been used by member banks, as indicated previously, to liquidate their indebtednesses with the Reserve Banks, which accounts for the rapid decline in the bill holdings of the System. Once their borrowings at the Reserve Banks were paid, the member banks utilized the incoming gold as a basis for credit expansion.

It is open to question whether the earning assets of the System should fluctuate as widely as they did in 1919–1921. Would they have done so if the Reserve Banks had maintained their rates above the market, curtailed their open-market operations on the upward sweep of the cycle, and expanded them once liquidation had set in? If the Reserve Banks set out to mitigate fluctuations in the business cycle, will not their earning assets reflect more stability and fluctuate less than if they make no effort to exercise control? This does not mean to assert that their bill holdings will not fluctuate. They will, but their range of variability will be less the more the System makes an earnest effort to eliminate cyclic fluctuations in prices.

The Efficacy of the Bank Rate. The fall of prices in May of 1920 initiated a controversy, which has been waging ever since, as to the exact effect of the Bank rate on interest rates, the discounts of the Reserve Banks, the investments of the member banks, and prices. With regard to this question, as in the case of most, there are two schools of thought with quite opposite opinions. The one holds that the Bank rate was an effective cause of the fall in prices. Diametrically opposed to this point of view are the statements of those who affirm that the Bank rate had no effect. They assert that interest rates are but a small part of the cost of production as compared with the cost of labor and of materials and that therefore it would be foolish to assert that a rise in interest rates would have a restraining effect on industry. This school would maintain that it was not the increases in the Bank rate which brought on the period of depression, but a downright refusal of banks to extend additional amounts of credit. Between these two extreme points of view there are, of course, many variations and shades of opinion. So complicated is this problem, the exact effect of the Bank rate on prices, by the multiplicity of other factors that it is incapable of a statistical solution. By no known mathematical process can we isolate these other factors and determine with exactitude the part played by the Bank rate in inducing the fall in prices. For instance, what weight would we assign to such causes as the rise of the Japanese Bank rate, the rationing of credits at home

and abroad? It is because of the complexity of our problem that we are forced for a solution to rely upon statements of those who have made a careful study of the whole period.

Opinions of the Officials of the System Regarding the Efficacy of the Bank Rate. It is but logical that we should turn first of all to the pronouncements of the Reserve Board and of the officials of the regional banks, those who were responsible for the fluctuations in the Bank rate, for statements of its efficacy. The officials of the System took the stand that the Bank rate, in the period preceding America's entrance into the war, had no effect upon market rates by reason of the great abundance of loanable funds possessed by the commercial banks of the country. The only time that the Reserve Banks did exercise any degree of control, so they asserted, was during the last two or three months of 1916 and the first quarter of 1917.[106] During the time of America's participation in the war the policy of the Treasury Department rendered the Bank rate impotent to control expansions of credit.

Through 1919, in the editorials of the *Federal Reserve Bulletin* and elsewhere, the Board began to discuss the many problems related to rate control. In the warning it issued in June of 1919, it took occasion to point out that a sharp check to speculation could ordinarily be administered by advances in the rediscount rates at the Reserve Banks. However, it went on to say that this method could not be employed as long as the Reserve Banks were forced to promote the absorption of government securities by the maintenance of low rates of interest. The hope was expressed that when the Reserve Banks assumed once more their normal functions of making advances chiefly against liquid commercial paper that existing conditions in the money market might be checked by changes in the rates of discount.[107] At this time evidently, in the opinion of the Board, the efficacy of the Bank rate was a thing not to be doubted.

In the *Bulletin* for October 1919, the efficacy of the Bank rate was discussed at some length, with particular reference to American conditions and quite contrary to its expression of a month ago, the Board concluded that there was no reason to believe that advances in the rates of discount could have checked those speculative forces which were so predominant at that time.

106 *Federal Reserve Bulletin*, 1918, p. 1176.

107 The warning is printed in *The Commercial and Financial Chronicle*, June 7, 1919, p. 2286.

The extent to which Federal Reserve Bank rates may normally be expected to be "effective," in the sense in which that term is used in England and Continental Europe, still remains to be determined. Our experience under the Federal Reserve system is too brief to enable definite conclusions to be drawn with reference to this matter. It seems doubtful, however, whether, for a long time to come and taking the country as a whole, there will be any such close connection of Federal Reserve Bank rates with the volume of credit in use as was to be noted, for example, in pre-war days in England, the home of central banking. Our nearest approach to an effective Federal Reserve Bank rate was reached in the closing months of the year 1916.

The habitual temper of the American business community is sanguine and American business is, for the most part, done on liberal margins. The bulk of the requirements for credit facilities comes from industry and trade mainly domestic in its origin and character. Such a condition does not make for sensitiveness to the influence of changing rates such as was the case in England, where much business is done on a narrow margin of profit and where banking resources were normally employed largely in the international loan market.

At any rate it seems fairly clear that little desirable restraining influence could have been exercised by Federal Reserve Bank rates in recent months. While repeated tendencies toward speculation of one kind or another have manifested themselves and, at times, given rise to an undesirable situation, there is no reason to believe that an advance of rates would have held these tendencies in check, at any rate no such advances as could have been undertaken without serious injury to legitimate business and desirable enterprise which were entitled to encouragement and support. There is no ready method in reserve banking by which the use of reserve facilities can be withheld from use in undesirable lines of activity without, also, being withheld from use in desirable lines.

The problem of controlling the volume and uses of credit in a country with so much diversity of business interests and business temper as the United States is far from simple and far from certain of solution. Experience alone can determine whether and in what manner a technique of control through rates can be developed which will secure the desired results. The objects to be attained are, however, clear and vastly important. They are to regulate the volume and uses of credit so as to give to productive industry at all times the beneficial effects of credit stimulus and support

without, however, opening the way to the costly evils of credit and price inflation.[108]

A month later the Board emphasized the fact that present conditions were abnormal and that consequently discount rates could not be expected to exercise the same measure of control.

> Federal Reserve Banks can not, in a time like the present, easily control this condition of affairs merely through changes of discount rates, however important the influence exercised by such changes. The fact that there is as yet no free movement of gold between nations and that balances of trade are wholly abnormal prevents rediscount changes from exerting the effect which they would in normal times. Cooperation on the part of member banks is therefore necessary to the preservation of a satisfactory condition of strength throughout the banking system as a whole, and good results can not be obtained through any single method, least of all through the use of those modes of restraint and correction which are in ordinary circumstances sufficient for the purpose.[109]

The abnormality of conditions was constantly stressed by central bankers through this period as an explanation of their hesitancy in raising rates to a higher level. Because of certain peculiarities in the situation they affirmed that higher rates would be quite ineffective. It is true, of course, that so long as governments were heavy borrowers in the market, and borrowed in a manner provocative of inflation, rises in the Bank rate would be ineffective.[110] This has been quite aptly demonstrated in the case of the Reichsbank which on April 23, 1923, increased its rate to 18% without inducing a fall in prices. If then by an "abnormality" in conditions is meant a state of affairs in which the Government is a constant and heavy borrower in the market, and borrowing beyond the ability of the country to save, of course increases in the Bank rate will not be effective in checking an upward movement of prices. "Abnormality," however, in the sense in which the Board employed the term, meant the absence of free international movements of gold. The effectiveness of the Bank rate does not require that a nation be on a gold basis. The value of a gold basis simply lies in the fact that ex-

108 *Federal Reserve Bulletin,* 1919, p. 911.

109 *Ibid.,* p. 1010.

110 See statement by McKenna on this point, *Federal Reserve Bulletin,* 1920, p. 252.

ports of gold serve as a warning and spur to central banks, which otherwise might be hesitant in raising their rates. If nations are on a gold basis the price fluctuations in one will parallel those in another and exports of gold will serve to indicate that prices in one nation have risen too rapidly and above those prevailing elsewhere, and that the time is ripe for an increase in the Bank rate. The Bank rate of a nation on a paper basis, however, may be equally as effective in engendering a fall in prices and in rectifying the foreign exchanges as rates of discount in gold standard nations. This is well illustrated in the case of England, which abandoned the gold standard at the outbreak of the war, where prices fell from 313 in April 1920, to 157 in December 1921. Central banks can always affect prices if they are able to exercise control over the amount of circulating media, whether the nation in question be on a paper, gold, or silver basis or uses dodo-bones as its standard of value.

As opposed to the Board's skepticism regarding the power of the Bank rate, the Federal Reserve Bank of New York described the effect of the increases in November 1919, in the following terms:

> Following the rate increase of the Federal Reserve Bank call money renewed progressively at ten, twelve, fourteen, and sixteen per cent., and on November 12, after a week of hesitation prices broke violently. Sales on that day were more than 2,500,000 shares. Industrial stocks as a group closed 12½ points and railroad stocks 5 points below the highest of the year. Certain industrials which had been the leaders on the rising market closed from 51 to 126 points below the year's high record. Subsequently prices recovered somewhat, and in the final week the volume of transactions fell off materially.[111]

Through 1920 the Board discussed at frequent intervals the effect of rate control. It was during this year that the Bank rate reached its maximum figure and that prices began to turn downwards.

In the *Bulletin* for March the statement appears that the increases in the Bank rate had not as yet had time to make themselves fully felt. "In some parts of the country very direct results are recorded as having been experienced, while in other

[111] *Report on Business Conditions,* Second Federal Reserve District, November 20, 1919, p. 3.

parts of the country the situation is not so obvious."[112] While admitting that the Bank rate was the normal and traditional method of credit control it was again emphasized that its efficacy presupposed normal conditions.[113] In the same issue of the *Bulletin* the Federal Reserve Bank of Cleveland reported that the effects of the increases in its Bank rate were quite apparent, that:

> the wisdom of the action of the Federal Reserve Bank in raising the discount rate is reflected in a more careful scrutiny by bankers of applications for loans to determine the purposes for which they are to be used. Bankers generally report that plenty of money is available for legitimate uses but none to be had for speculative purposes.[114]

In the April *Bulletin* the effect of the discount policy of the System is described at some length:

> There has been during the month of March no marked change in the Board's discount rate policy, save an advance in the rediscount rate on bankers' acceptances in district No. 7. The advance in discount rates previously put into operation, however, is having an effect which is particularly noticeable in a few of the larger financial centers. At these points bankers have actively taken up the work of credit restriction and limitation. In some cases this restriction has extended to the point of declining to take on new business, the banks confining themselves to providing for the needs of their already recognized customers. In other cases important institutions, although not limiting the scope of their commercial activities, give evidence of endeavoring to curtail the amount advanced by them for stock market or investment operations. In sundry cases where the amount of such loans has appeared to increase, such growth has been due to the action of out-of-town correspondents in increasing their loans on call. These, however, are only sporadic cases and constitute an exception to the general rule. Taken by and large, the advance of rates has exerted a restraining effect and has tempered the policy of member banks. Such an effect has been materially aided by the efforts of the Federal Reserve Banks in different parts of the country. They have endeavored, through statements issued to member banks, to have necessary borrowings kept within reasonable limits.

[112] P. 221.
[113] *Federal Reserve Bulletin,* 1920, p. 223.
[114] *Ibid., p.* 235.

> The influence of the discount rate policy of Federal Reserve Banks upon the investment market has if anything been less obvious than in the commercial banking field. As money rates have increased, the influences tending to maintain capital operations at a comparatively low level have been correspondingly lessened. . . . An unexpected incident in the discount rate policy has been the shortening of accommodations which had previously been obtained by various concerns through the aid of commercial paper brokers. These have apparently continued to decline, and those who were obtaining assistance in this way have been led to increase their direct demands upon banks and through them upon Federal Reserve Banks. There has, in consequence, been some disposition on the part of borrowers to regard the discount rate policy as responsible, not only for a curtailment of speculative and investment funds, but also for a shortening of commercial credit in the form to which reference has been made.[115]

By July the Board was able to report that the working of credit control in America through the application of higher discount rates had met with marked success:

> It is true that during the earlier period of its application, in the months of November and December, 1919, and January and February, 1920, an absolute check to the growth of rediscounting at Federal Reserve Banks was not afforded. This fact, however, should be interpreted not in the light of absolute figures, but rather in that of relative conditions.[116]

The Bank rates, the Board concluded, had been instrumental in checking the rapidity of growth in the earning assets of the Reserve Banks. In the *Bulletin* for August, Governor Harding reiterated this same idea.[117]

In the September issue the Board undertakes to dispel the idea that an indiscriminate liquidation of credit had been the object of the Board's recent policies. "The primary concern of the Federal Reserve Board," it went on to say, "now, as always, has been to make sure that the essential credit needs of American industry are being met."[118] It made this statement in spite of the fact that less than a year previously it had de-

[115] *Federal Reserve Bulletin,* 1920, p. 345.
[116] *Ibid.,* p. 665.
[117] *Ibid.,* p. 774.
[118] *Federal Reserve Bulletin,* 1920, p. 904.

cleared that there was no ready method by which the use of reserve facilities could be withheld from employment in undesirable lines of activity without at the same time being withheld from use in desirable lines.[119] In the meantime the attack of the soft money partisans had begun, in consequence of which the System commenced to trim its sails.

This is particularly noticeable in the *Seventh Annual Report of the Federal Reserve Board*, [120] in which the statement appears that the precautionary steps taken by the Reserve System did not produce deflation but simply checked expansion which had been proceeding at a dangerous rate and that the policy of the Reserve Banks prevented a larger measure of distress than would otherwise have occurred. Later on in the same report,[121] data are given to prove that the policy of the Reserve Banks neither reduced the total volume of credit nor contracted the currency. In its report the Board lost sight of the fact that the checking of a cyclic rise in prices which has been under way for some time will automatically induce deflation. It would have been impossible to have stabilized prices at the level attained during the spring of 1920. Prices either had to continue to advance rapidly, or to fall. They could not be stabilized, for once the price rise was checked there would have ensued a movement on the part of retailers, jobbers and wholesalers to dispose of their stocks acquired during the upward trend. All who had goods in storage would have dumped their holdings on the markets. They could not have continued to hold goods on borrowed funds and pay the interest rates demanded unless the price rise were to continue. The fall in prices would have become accumulative, would have gained momentum, and could not have been halted until the deflationary forces had exhausted themselves. The admission by the Board that it had checked the rise in prices was at the same time an admission, though the Board was unaware of it, that its policy had engendered the fall in prices.

While the *Monthly Review* of the New York Bank discussed the efficacy of the Bank rate much less than did the Board, its statements were on the whole more consistent and clear cut. From the beginning it took the position that rate control had been effective.

[119] *Ibid.*, 1919, p. 911.
[120] P. 2.
[121] PP. 13–14.

The issue for February 20, 1920, declared:

> The effect of the increase in the Federal Reserve Bank discount rates, announced on January 21, is evident in a generally conservative attitude of banks and business men toward industrial expansion at this time, and in a substantial liquidation of speculative commitments. During the last thirty days there has been a gradual reduction in bank loans in this district, more than two-thirds of which has been in the decline of loans secured by stocks and bonds. Since last October, when bank loans in this district were at their highest point, they have declined nine per cent.[122]

After the Bank rate in New York had been raised to 7% the New York Reserve Bank stated:

> The result of the higher Federal Reserve Bank rates, as far as we can learn, has been to impress borrowers with the necessity of borrowing as little as possible, and of presenting a sound case when applying for credit. The increasing number of sales, not only of manufactured goods but of raw materials, during the past month, is clearly indicative of the desire to reduce stocks of goods which are being carried.[123]

Through 1921 and 1922 the *Federal Reserve Bulletin* contained little as regards the efficacy of the Bank rate. To be sure, in the *Ninth Annual Report of the Federal Reserve Board* the rather obvious statement does appear that there is a closer relationship between Bank rates and market rates in financial centers than in rural communities.[124] A perusal of the statements of the Board leads one to conclude that they were never sure themselves of the exact effects of increases in the Bank rate. At first they seemed to assume, without question, the power of Bank rates to check expansion. Then they began to be a bit skeptical and doubt whether the Bank rate would really be an efficient instrument of control until normal conditions had reappeared. Following the increases in June of 1920 the Board declared that rate control had met with marked success. By the fall of 1920 they asserted that their policies had not induced deflation but had only served to check expansion.

A review of the editorials appearing in the *Bulletin* forces us to the conclusion that the Board followed a frankly opportunistic

122 P. 1.
123 Issue of June 30, 1920, p. 1.
124 P. 16.

policy as regards matters of theory. Their explanation of the relationship between prices on the one hand and money and credit on the other was most contradictory. Their discussions of the efficacy of the Bank rate were similarly inconsistent. When prices were rising they assumed, as if it were not even a debatable question, that the Bank rate was effective and could control the expansion of credit, but once prices had begun to fall, and criticisms of the Board's policy began to pour in, their stand was reversed. Statements appeared that the Board had simply checked the expansion and had not induced the fall in prices. Still another illustration of the opportunistic policy of the Board is the fact that the word "inflation," from 1919 on, scarcely appeared in the *Bulletin;* the term "expansion" was used in its place. The word "inflation" was tabooed. It might well be questioned whether the Board at any time had any clear-cut, positive ideas on the subjects we have been reviewing. The probability is that the Board was carried along with the tide, expressing opinions to appease popular wrath. It is, indeed, most unfortunate that a scientific publication, which the *Bulletin* evidently presumes to be, would descend to such tactics.

As might well be imagined, the effectiveness of the Bank rate was discussed at considerable length before the Joint Commission of Agricultural Inquiry, particularly as to its effect upon the agriculturalists. In the early part of his testimony, Governor Harding declared that its effect had been simply to slow down the rate of expansion and that there had been no curtailment of credit.[125] He had discussed this point at somewhat greater length before the Committee on Agriculture and Forestry in 1920, when they were having under discussion the revival of the War Finance Corporation. He said at that time:

> The Federal Reserve Board, as it understands its functions, has nothing to do directly with prices or living costs. It is a banking board exercising a general supervision of the Federal reserve banks, and the rates of discount which are fixed by the Federal Reserve Board following recommendations of the directors of the Federal reserve banks, are not fixed primarily with reference to prices. The Board does not feel that it has any right to establish any rates of discount with a view of putting prices up, or putting them down. The board's duties are clearly defined in the Federal re-

[125] *Hearing before the Joint Commission of Agricultural Inquiry,* Part 13, p. 86.

serve act, and it has endeavored to carry out the provisions of that Act. At the same time we have realized the desirability of working the situation out and bringing credits down to a more normal basis with as little disturbance to the agricultural industry and general business as possible. Up to the middle of September it looked as though we were going to succeed. The discounts of the Federal Reserve Banks, or I may say their total invested assets, which includes paper rediscounted for member banks and purchases of acceptances, increased from the 19th day of September, 1919, from $2,350,000,000 to $3,300,000,000 on the 27th of January, 1920—an increase within four months of nearly 50 per cent. It is evident that any continuation of such a rate of increase as that would soon exhaust the resources of any banking system, no matter how strong. However, from the 27th of January, 1920, when Federal reserve bank discount rates were advanced, until the present time, there has been only a moderate increase in the invested assets of the Federal reserve banks, but a substantial increase in the volume of Federal reserve notes outstanding, and while the angle of ascending credit during the period, September 19, 1919, to January 27, 1920, was 45 degrees, the angle since the 27th of January has been but about 2 degrees.

In the New York district there has been considerable liquidation. Speculative loans have declined probably $1,000,000,000 or more, and deposits in the banks of New York City are about $1,400,000,000 below their high point. In other sections of the country, however, bonds and deposits have increased by about $5,000,000,000 since September, 1919.[126]

On another occasion [127] Governor Harding declared that had the Reserve Banks not put on the brakes when they did, there would inevitably have been a smash. He explained this in a detailed way before the Joint Commission of Agricultural Inquiry: [128]

Senator Lenroot. Well, what do you think would have happened if the Board had not adopted this policy [of checking expansion]?
Governor Harding. You know what happened in Cuba, Senator, where the Cuban banks continued to expand their loans and

[126] *Reviving the Activities of the War Finance Corporation,* Part I, pp. 52–53.

[127] *Amendment to Abolish Office of Comptroller of the Currency,* etc., p.17.

[128] *Hearing before the Joint Commission of Agricultural Inquiry,* Part 13. p. 362.

accommodate people. They all collapsed. You know what happened to the Philippine National Bank.

Senator Lenroot. That is just what I am getting at. Then the policy of the Federal Reserve Board did have, in your judgment, a very substantial effect in preventing further expansion and a further rise in prices? Is that true?

Governor Harding. I do not know; these things come in cycles, senator.

Senator Lenroot. But you just made the statement. I asked you, Governor, what in your judgment would have happened but for the adoption of this policy, and you referred me to Cuba.

Governor Harding. Well, I think if the board had not adopted this policy prices possibly would have continued to advance for a month or two longer, and when the collapse did come the consequences would have been even more serious. We would have had an aggravation of the present conditions in agriculture and industry plus general banking insolvency all over the country.

Senator Lenroot. Granted that is true, if the Board had adopted that policy a year before it did, would there not have been less disturbance than we now have?

Governor Harding. That is quite probable, Senator.

Senator Lenroot. Now, why was it not done?

Governor Harding. For reasons relating to Government finance.

In spite of the fact that Governor Harding had declared that increases in the Bank rate prevented prices from continuing to rise for another two months, on the very next page of the inquiry he asserted emphatically that banks can not control cyclic fluctuations in prices, but that they must "go along with the tide." He explained that borrowings can not be regulated during a boom period by increases in Bank rates because speculative profits are so huge that any rates of interest can be paid. Further on, in reply to an inquiry by Representative Mills, he stated that the drop in prices would have occurred irrespective of any action on the part of the Board and that the assumption that prices would have remained on a high level because of the maintenance of low Bank rates was fundamentally erroneous. Despite the inconsistencies appearing in Governor Harding's testimony, it is quite evident that most of the time, at least, he did believe that the Bank rate had been effective.[129]

[129] See, for instance, *The Commercial and Financial Chronicle,* September, 1920, p. 1228.

The effect of the advances in the discount rates of the Federal Reserve Bank of New York, explained Governor Strong, to the members of the Joint Commission of Agricultural Inquiry, was to force banks to discriminate carefully between speculative loans and those of a more essential character.[130] In answer to a query put by Representative Sumners he asserted that the Bank rate in New York had had a much greater effect than Bank rates in Texas. Indeed, he doubted whether the Bank rate in Texas had had any influence.[131] Later on in his testimony he declared that deflation was bound to have come and that increases in the Bank rates moderated the expansion, but did not control it. He did not explain his meaning of the terms "moderate" and "control."

While the expressions of the officials of the System are contradictory and not clearly defined, it is apparent that two ideas were rather steadily maintained. First of all, the idea that the Reserve System, in fixing its rates of discount and in determining its policies, was not interested in price fluctuations was constantly stressed, and second, the belief that the Bank rate was effective[132] in checking the expansion was maintained.

Let us pass from a consideration of the opinions of the officials of the System as regards the effectiveness of the Bank rate, and proceed to review statements made by economists and students of banking disassociated with the active operation of the Reserve Banks. Their statements are of value in that they reflect the opinions of those whose perspective is broader and whose range of vision is wider than that of the men actively connected with the Reserve Banks.

In his work entitled *Money and Foreign Exchange after 1914*, Professor Cassel states:[133]

> The obviously far too low discount rate maintained during the whole of 1919 had at any rate fully manifested its effectiveness by the enormous rise in prices that was its immediate result. The steps taken later to raise the discount rate also proved effective, as we shall see, but they were over a year too late, and therefore

[130] *Hearing before the Joint Commission of Agricultural Inquiry*, Part 13, p. 720.

[131] *Ibid.*, p. 723.

[132] In speaking of the effect of the rise in its Bank rates, the Federal Reserve Bank of Richmond stated that the rise had checked borrowing or expansion, as it was intended to do. (Circular No. 98, 1920.)

[133] PP. 198–199.

failed to prevent the inflation which reached its climax in the spring of 1920.

Professor Mitchell describes the effects of the November 1919, rise in the Bank rate in the following terms:

> . . . when the Board did raise its rates in New York on November 3rd *and* insisted on closer scrutiny of loan applications, the contraction of credit was prompt and the consequences spectacular. We may hope that the Board will be encouraged by this episode to act more boldly in the future and in better season. Nor is this hope forbidden by the Board's assertion that "little desirable restraining influence could have been exercised" over the speculative campaign of the summer by an advance of rates. For the Board publishes opposite opinions about the same subject in the same bulletin often enough to suggest that it may change its opinions easily from one month to the next.[134]

Professor Davenport made the sweeping assertion:

> The amount of credit granted is readily controlled by the rates of rediscount imposed by the Reserve Banks—as the last few months have proved—despite all the previous denials by the Reserve Board.

To insert the viewpoint of a practical banker, Mr. Forgan, of Chicago, declared:

> One thing, however, has been proved, and that is that the raising and lowering of the rediscount rates by the Federal Reserve Banks influences very greatly the lending of money by the banks. The question may be raised whether this is not due more to the pressure of the example set by the Federal Reserve Banks than to the mere change of a relatively small percentage in the rediscount rate. But be that as it may, the banks in the country have followed the lead of the Federal Reserve System.[135]

Dr. Willis, in his work entitled *The Federal Reserve System*, states that the effect of raising the discount rates met with marked success:

> The question has been constantly asked regarding relationship between control of credit, the application of higher discount rates,

[134] Mitchell, *Prices and Business in the Near Future*, p. 5.
[135] Forgan, *Currency Expansion and Contraction*, p. 170.

and the actual expansion of operations. On this subject the evidence was still lacking in certainty as to details. The general conclusion to be drawn was unmistakably to the effect that the operation of credit control through higher discount rates has had a marked success.[136]

Professor Sprague believed the increases in the Bank rate were effective but worked slowly:

> The discount rate of the Reserve Banks is clearly an effective means of checking credit expansion, but it is also evident that advancing rates influence the situation rather slowly. Credit continued to expand for some months after rates were finally advanced in May to the present high level.[137]

In the same article Professor Sprague makes the suggestion that the practice of advancing rates by increments of 1%, as followed by the Bank of England, should be adopted as experience shows that advances of fractions of a per cent are ineffective. This idea is quite opposed to that of Professor Mitchell, who declared that the fractional advance in November of 1919 was most effective. Mr. Reynolds, a practical banker, also of Chicago, has expressed it as his opinion that changes in Bank rates are effective only if made well in advance of foreseeable changes in business activity.[138] In a discussion of the subject, Professor Moulton declares that increases in the Bank rates tended to increase the discount rate on all the loans of member banks:

> If the total volume of loans is to be reduced it will therefore be necessary for discount rates to be raised on all classes of paper and for the Federal Reserve banks to refuse to expand their open market purchases. A raising of discount rates on all classes of loans by the Federal Reserve banks would undoubtedly tend eventually to reduce the total borrowings from the Federal Reserve banks and in turn the total volume of loans made by member banks to customers. A raising of the rates of discount at the Federal Reserve banks tends to increase the discount rates on all loans by member banks. For instance, the recent increase in discount rates was almost immediately followed by a stiffening of rates on brokers' paper, on over-the-counter loans to customers, and on collateral loans.[139]

[136] p. 1403.
[137] Sprague, *The Discount Policy of the Federal Reserve Banks*, p. 24.
[138] Reynolds, *Rediscount Rates, Bank Rates and Business Activity*, p. 195.
[139] Moulton, *Banking Policy and the Price Situation*, p. 170.

To quote the opinion of an Englishman on this question, Mr. Hawtrey has stated:

> . . . it was only by tentative and hesitating steps that the Board tried to cope with this menacing situation, and it was not till 1st June, 1920, that the rediscount rate was raised to 7 per cent. That measure was successful, and the tide turned, but the ebb had to be proportioned to the flow. In so far as the expansion had got out of hand, the subsequent contraction had to be more severe.[140]

So far we have quoted the opinions of nine students of banking. Of these, two reside in foreign countries and two are actually engaged in banking. Of these nine men, eight assert quite definitely that the Bank rate was effective. As opposed to these views is that of Miss Youngman, who holds that not the Bank rate but the downright refusal to loan induced deflation:

> There is no intention of denying that the announced policy of the Federal Reserve Board as advertised by rate advances helped to hasten an inevitable credit contraction and served to make its consequences less disastrous than they would otherwise have been. But it is not believed that the changes in discount rates were the directly effective weapons of credit control. Downright refusal to expand certain classes of loans and pressure for repayment of others were the potent factors in credit contraction, and the rate advances were mere outward signs of the initiation of a sterner policy toward member banks.[141]

In the minds of many of those who maintained a skeptical attitude towards the efficacy of the Bank rate, there ran the thought that with interest playing such a small part in the cost of production it was practically impossible for a Bank rate of 6 or 7% to be effective. Before its influence would be felt the Bank rate must needs be raised to 20 or even 30%. Those who hold to this viewpoint, influenced perhaps by the teachings of the English classical school of economics, stress too greatly mechanistic factors, such as costs of production, and quite overlook the influence of psychological factors on industry. Even a very moderate rise in the Bank rate may have great influence on busi-

140 Hawtrey, *Monetary Reconstruction,* p. 121.

141 Youngman, *The Efficacy of Changes in the Discount Rates of the Federal Reserve Banks,* p. 476.

ness confidence and consequently on the whole course of business.[142] People manufacture for future consumption. The manufacturer borrows funds to fabricate goods for future use. The extent of his desire for credit and of his eagerness to produce will depend upon his estimates of future demand, of the future course of business and of future profits. A rise in the Bank rate may convince him that it would be unwise to continue to produce or to enlarge his production at a time when prices are apt to fall. It may also convince those who have hoarded goods of the wisdom of selling their stocks. The psychological effects of the Bank rate have been quite lucidly set forth by Hawtrey:[143]

> But, it may be asked, how is this possible, [for the Bank rate to be effective] when prices are rising at the rate of 30 per cent. per annum? No one would contemplate such a rate of discount of anything approaching such a figure. Yet how can a lower rate be deterrent?
>
> The explanation is that it is not the *past* rise in prices but the *future* rise that has to be counteracted. The problem is a psychological one. As soon as the rate is high enough to offset the traders' hopes of future profits it becomes deterrent. And a very relevant factor in the psychological problem is the traders' expectations as to the intentions of the authority which fixes rates. If that authority means business, and can be relied on to push up rates relentlessly till they become deterrent, the *mere expectation* that this will happen may make quite a moderate rate adequate. For the prospect of rising prices is dispelled and normal standards of profit and interest are re-established in the traders' minds.

The increases in the American Bank rate were effective.[144] Coming at a time when member banks were rediscounting heavily they were an important factor in engendering the fall in prices and bringing about the period of readjustment, as an unbiased perusal of official documents will testify.

The fact that credit expanded for some time following the in-

[142] In his work entitled *Bank Credit* (pp. 115–116) Professor Phillips declares that a bank can increase its loans by only $1.22 for every $1 borrowed from the Reserve Bank. He therefore concludes: "A rate of *rediscount*, therefore, that equals or exceeds the rate of *discount* tends strongly to check borrowing by the commercial banks."

[143] Hawtrey, *Monetary Reconstruction*, p. 108.

[144] Bank rates may exert their influence through causing a rise in rates at commercial banks, or through their effect on business confidence or through inducing commercial banks to contract their loans,

crease in the Bank rates does not invalidate our conclusions. We should expect this very thing. During and following the turn in the price level the rediscount operations of central banks normally increase. Banks must borrow, for their loans "freeze" at the very time their deposits are withdrawn.

Nor does the fact that a nation has abandoned the gold standard and is on a paper basis render the Bank rate the less effective. Contractions of credit in one nation accompanied by falling prices will start a flow of goods to those nations in which higher prices prevail instead of a flow of gold, as would be the case were the gold standard maintained. The fall of prices in the nation in question and the increase of exports will cause her money in terms of the moneys of foreign nations to appreciate. An effective Bank rate in one part of the world is not long in making its influence felt generally, except in those countries where governments are forced, for internal or external reasons, to pump increasing quantities of money into circulation.

The Opposition to Falling Prices. A period of rapidly falling prices is one of great hardship for many classes in the community. The debtor finds the weight of his obligations increasing as the purchasing power of the monetary unit rises, the laborer is without work and the producer is unable to sell his products for enough to pay the cost of production. It is then that cheap money advocates come to the fore promising their countrymen economic salvation through a multiplication of money and credit. Agitation on the part of the debtor classes for issues of paper money to stay the falling price level led to Shays' Rebellion in Massachusettes, in the period following the Revolutionary War. The desire for more money manifested itself in the days before the Civil War in wildcat banking and in the demand for state banks. A few of these banks, such as the State Bank of Indiana, were as well managed as any financial institution could humanly be; but others threw off all bonds of restraint and indulged in the pleasant pastime of flooding the country with paper money. Following the Civil War the protests of the agriculturalists against falling prices and against the "bloated" bondholder were voiced in an opposition to the contraction of the greenbacks, in the Greenback and the Populist parties and in Bryan's advocacy of bimetallism. Nor is opposition to falling prices a phenomenon peculiar to America. Rasín, the late Finance Minister of Czecho-Slovakia, became exceedingly unpopular because of his deflation policies and his action in

tripling the value of the crown in terms of dollars. Those who would urge that such greatly depreciated currencies as the French franc and Italian lira be restored to their former gold parity would do well to consider the political consequences of their actions before embarking on that deflation which would be required to bring their values back to the pre-war level.

The grievance of those who have been injured by the recent fall in prices has expressed itself in criticisms of the Federal Reserve System and in the support of the naïve currency proposals of Edison.[145]

Those affected have forgotten, in the midst of their troubles, the injuries the preceding rise in prices, from which they had profited, had wrought on great masses of people and, as it were, a fulfillment of the law of compensation, that many of those who formerly had been hurt, were now benefiting from the falling prices. As early as the 31st of May, 1920, the deflation policy of the Reserve System was criticised in Congress by Senator Smith, of South Carolina. He said in part:

> Mr. President, I am standing here this afternoon to say that the last amendment which we passed to the banking and currency law, giving the Federal Reserve Board the power to restrict the amount of paper which a member bank may discount to a percentage of the capital and surplus of that bank, and when that percentage is exhausted then to gradually increase the rate of interest, will operate, as it is now operating, to restrict the credit and capital necessary to the industrial and agricultural centers of the country, and, in my opinion, will work a disaster that can not be calculated.[146]

Though Senator Smith confined his remarks simply to the Phelan Act, which provided for the progressive discount rates, as time went on the Reserve System was criticised by its opponents for every conceivable crime and error. It was claimed that in engendering deflation the System had bowed to the dictates of the Republican party; that the policy of deflation was agreed upon at a secret meeting of the Board held on the 18th of May, 1920; that the System had taken a fiendish delight in singling out the farmer alone of all classes in the community

[145] For a discussion of Edison's schemes, see *The New York Times* for July 16, 1922, Section 7, p. 1.

[146] *Congressional Record,* Vol. 58, p. 7978.

and in deflating him; that large banks had been favored as against smaller institutions; that excessive margins had been required of the country institutions and none of the big city banks; that the Governor of the Federal Reserve Board was "bearish" on cotton and therefore in favor of deflation; that increases in the Bank rate had robbed the Liberty bond investor of millions of dollars through depreciating his holdings; that the Federal Reserve Banks had profiteered; that the salaries paid to their officers were excessive; that the System had done nothing to prevent, in fact had fostered, usurious rates of interest in New York City; and that the Board had maintained a publicity fund which they used to disseminate propaganda.

The Republican Party and Deflation. Those who claim that the Republican party had ordered the Reserve Banks to deflate usually introduce their remarks by references to the famous resolution of May 17, 1920, introduced by a Republican Senator, McCormick. They fail, of course, to state that this was carried unanimously. To further substantiate their case they then cite the Republican platform of 1920, which read in part:

> We pledge ourselves to earnest and consistent attack upon the high cost of living by rigorous avoidance of further inflation in our Government borrowing, and by courageous and intelligent deflation of over expanded credit and currency.[147]

President Harding's speech accepting the Republican nomination, delivered on July 22, 1920, would next be referred to, in which he restated that the Republican party would attempt intelligent and courageous deflation.

In the discussions of the influence of political parties on the Bank rate hypocrisy has been enthroned supreme. The opponents of the deflation policy of the Reserve Banks fail to recall in their remarks the opposition which the public had previously manifested to the rising prices; or the declining gold reserves of the Reserve Banks through 1920, or their increasing liabilities, or the over-expanded condition of the commercial banks of the country, or the decline in prices in other nations. As the opposition of the farmers to the falling price level increased, President Harding had less and less to say about deflation. Finally, in a letter to Representative Mondell, outlining the work of the Republican party in Congress, he mentioned as one of their crowning achievements the arresting of the fall in prices through a progressive

[147] *The Financial Review*, 1921, p. 39.

reduction of the Bank rate. As a result, so President Harding naïvely claimed, Liberty Bonds had risen in value and agriculture and industry had brighter prospects ahead than at any time since "the mistaken program of drastic deflation adopted by those who were then in control of Government policies."[148] Many Republican politicians claimed that the Democratic party was responsible for deflation, as prices had begun to fall under a Federal Reserve Board appointed by a Democratic President. The unfortunate part of this whole controversy was the assumption that the policies of the Reserve Banks might be dictated by politicians guiltless of any knowledge of economics or banking. The policies of the Reserve Banks should, of course, be formulated by disinterested experts, men who are not concerned with the fortunes of any political party. Nothing could be so disastrous as to have the raising and lowering of the Bank rates, and the adoption of credit policies by the Reserve Banks, governed by the exigencies of party politics. Politics and banking must be divorced if the Reserve Banks are to function most successfully or, in fact, if they are to function at all.

The "Secret" Meeting of May 18, 1920. The *Manufacturer's Record*, of Baltimore, in a very spectacular write-up, claimed that the Board's "drastic" policy of deflation was agreed upon at a secret meeting held on the 18th of May, 1920.[149] So startling seemed this revelation that Senator Gooding, of Idaho, introduced a resolution directing the President to order an investigation and report whether the purport of the meeting was incompatible with the public interest. In discussing his resolution he accused the Reserve Board of acting jointly with the Interstate Commerce Commission in paralyzing the agricultural interest of the country.[150] The minutes of this conference have since been published.[151] It was a meeting attended by the members of the Board, of the Federal Advisory Council, and by the Class "A" Directors of the Reserve Banks. Those present discussed in a very frank way economic conditions in various parts of the country, and the attempts made to remedy the overextended condition of banks. Nothing was said which would lead one to feel that the Board was controlled by the financial interests of the East or was unsympathetic with the needs of the agricultural sections. John Skelton Williams, who later developed into a

[148] *The New York Times,* October 16, 1922, pp. 1–2.
[149] Issue of February 22, 1923.
[150] *Congressional Record,* Unbound Edition, February 28, 1923, p. 4900.
[151] Senate Document No. 310, 67th Congress, 4th Session.

most severe critic of the policies of the System, and who because of this has been eulogized by the *Manufacturer's Record*, was present and declared himself in favor of a "reasonable degree of deflation or contraction." [152] He took issue with the Hon. A. C. Miller, who expressed himself as simply opposed to further inflation, a statement which Williams declared was too weak. At the conclusion of the conference Governor Harding suggested that those present hold the discussion confidential, for fear that people would rush to borrow if they anticipated a rise in rates. It was this statement which so roused the ire of the *Manufacturer's Record*. A careful reading of the minutes of this meeting reveals no deep-seated plot to deflate the farmer. Nor could we say that the System's policy of deflation was adopted at this meeting, for since the armistice the Board had favored a contraction of credits.

The System's Treatment of the Farmer. Probably the most serious charge brought against the System through these years was that it had purposely and premeditatedly discriminated against the farmer. The charge took several forms. It was claimed that the Reserve Banks had denied funds to the agricultural sections in order that they might be employed in speculation in Wall Street. The critics charged that small banks in the farming sections were treated unfairly as compared with the large city banks, and that the country banks had to collateral their borrowings from the Reserve Banks to an excessive extent. Senator Brookhart declared that the business of farming was not even recognized in the Federal Reserve Act,[153] and that the System had very arbitrarily determined the amount which it would loan in his home state, Iowa.[154] There is absolutely nothing to substantiate the charge, that the System had singled out the agriculturalist for deflation. To prove our contention, let us quote from the *Report of the Joint Commission of Agricultural Inquiry*, which if anything should be biased in the farmers' favor. After pages and pages of statistical data, it concluded:

> 1. That the expansion of bank loans in rural districts during the period of inflation ending June 1920, was relatively greater than in the industrial sections, taken as a whole.
> 2. That the action of the Federal Reserve Board and the Federal

[152] *Ibid.*, p. 49.
[153] *Congressional Record*, Unbound Edition, Vol. 64, p. 2888.
[154] *Hearing before the Joint Commission of Agricultural Inquiry*, Vol. 1, p. 17.

reserve banks during the 15 months preceding April 28, 1921, did not produce a greater curtailment of bank loans in the rural districts than in the financial and industrial sections.

3. Credit was not absorbed by the financial centers at the expense of rural communities for the purpose of speculative activities.

4. That the pressure of the forces of liquidation and depression in the agricultural sections was reflected in a reduction of deposits. This reduction of deposits, particularly demand deposits, was relatively larger in the agricultural and semi-agricultural counties in the United States than in the industrial counties.[155]

A study of the loans and discounts of the Reserve Banks in the agricultural sections, as compared with those in the industrial sections, and of the heavy borrowings of the former from the latter, should convince all that the System treated the farmer with great liberality, indeed, with greater liberality than the dictates of prudence should have permitted.[156]

The feeling among farmers that they had been unfairly treated was fostered by statements of the officers of many commercial banks, who were unwilling to meet further demands of agriculturalists. They asserted that the Reserve System would not allow bank loans to increase. Thus the "buck was passed" to the Reserve Banks. The Reserve System has not discriminated against the agriculturalist. From the beginning he has been the "spoiled darling" of the System.

Federal Reserve Banks and Speculation. In his testimony before the Joint Commission of Agricultural Inquiry, Senator Brookhart declared that 39% of the loans of national banks

[155] Part II, p. 117.

[156] Those who would desire to continue this study farther should consult:

Speech by Senator Glass, *Congressional Record,* Vol. 62, pp. 1237, 1238, 1244.

Report of the Joint Commission of Agricultural Inquiry, Part II, pp. 92, 103, 115.

Annual Reports of the Federal Reserve Board, 1921, pp. 65, 95, 96; and 1922, p. 9.

Hearing before the Joint Commission of Agricultural Inquiry, Vol. 2, pp. 99, 302, 326–331, 373, 370, 651–652, and 730.

Federal Reserve Bulletin, 1922, p. 264; and 1923, p. 141. Willis, *The Federal Reserve System,* pp. 1413 and 1476. Harding, *The Federal Reserve System as Related to American Business.*

Annual Report on the State of the Finances, 1920, p. 98. McDougal, *Agricultural and Commercial Loans.*

Scott, *Popular and Unpopular Activities of the Federal Reserve Board and the Federal Reserve Banks.*

had been employed in speculation,[157] a condition which he implied was fostered or at any rate not discouraged by the officials of the Reserve System. He did not explain the statistical processes involved in obtaining this figure, and frankly admitted that it was but an estimate. It is also implied in the testimony of John Skelton Williams that the Reserve Banks did little to prevent their funds from being used in speculative undertakings.

While it is contrary to the spirit of the Act for the funds of the Reserve Banks to be employed in speculation, it was known that they were so used through the period of inflation, though little complaint was raised at that time. The officials of the System endeavored to prevent this practice, but their hands were tied in that the Treasury policies for a long time would not permit the raising of the Bank rate.

Demanding Collateral. It was John Skelton Williams who laid particular emphasis on the practice of certain of the Reserve Banks of demanding what in his opinion were excessive amounts of collateral from the smaller banks of the country. In his testimony before the Joint Commission of Agricultural Inquiry he said:

> The small banks are called upon to state what the money is used for time and again in different parts of the country. The officers of the banks are called up to the Reserve Bank and are asked: "What are you going to do with this money?" Not only that, but they are sometimes not only required to leave with the bank the bills discounted, but to put up a great deal of additional collateral from time to time, which I think is a very questionable practice.[158]

Williams' successor as Comptroller of the Currency, in his 1921 report, asserted that all but one of the Reserve Banks had demanded excess collateral against loans.[159] The practice of the

[157] *Hearing before the Joint Commission of Agricultural Inquiry,* Vol. I, p. 11.

[158] *Ibid.,* Vol. 2, p. 68.

[159] P. 3. Crissinger reported: With one exception, the Federal reserve banks require collateral from banks rediscounting eligible paper. This requirement tends to take a too large proportion of the best paper out of the rediscounting bank. This has at times left the rediscounting institution in a difficult position if called upon to face extraordinary demands from depositors, because the bank finds itself without sufficient desirable paper to sell, to rediscount, or to offer as collateral for cash needed to meet the demands of depositors.

The one Federal reserve bank which does not require collateral from re-

Reserve Banks in requiring member banks to put up collateral equal to 150%, 200%, or 250% of the amount of the loan Williams declared to be a great wrong.[160]

He mentioned the case of a bank in the Southwest which claimed it was ruined by these exactions on the part of the Reserve Banks.[161] In his testimony before the Joint Commission Governor Harding explained that the Reserve Banks were clearly within their rights in demanding excess collateral, in case they felt the member bank to be in an overextended condition.[162] It was quite a common practice, he added, among commercial banks. In answer to a query he replied that one of the member banks to complain against this practice was the First National Bank of Hearne, Texas, which later became insolvent. The Dallas Reserve Bank had loaned this institution some $406,000, and on this loan, in spite of the excess collateral they demanded, they stood to lose $100,000.[163] Governor Miller, of the Kansas City Reserve Bank, justified this practice in the following terms before the Joint Commission:

> Now, Mr. Chairman, some suggestion has been made that some Federal reserve banks in agricultural districts have required excessive collateral from their members.
>
> *The Chairman.* You mean the Federal reserve banks?
>
> *Mr. Miller.* That the Federal reserve banks have. We have prepared here about 50 or 60 of the cases where we have required the greatest amount of collateral and the amount of liability, and we have given the reasons for asking that collateral.
>
> Here is a bank with a basic line of $17,000 that owed us $119,000; that is six times its basic line. We required general collateral of $42,000. I am giving you the cases that are the very largest proportion and every case that would be regarded as excessive.
>
> *The Chairman.* That is $42,000 in excess of the 100 per cent?

discounting banks insists that each rediscount operation shall stand on its own bottom. Under this method rediscounting banks offer nothing but gilt-edge paper, thus insuring careful and conservative operations on their part. This seems to me to be the plain intent and purpose of the law, and I believe the method of making rediscounts ought to be so clearly defined as to constitute an additional measure of safety.

[160] *Hearing before the Joint Commission of Agricultural Inquiry,* Vol. 2, p. 127.

[161] *Ibid.,* p. 157.

[162] *Ibid.,* p. 417.

[163] *Ibid.,* p. 418.

Mr. Miller. No; this bank has a basic line of $17,000, but, indeed, owed us $119,000. Now, in addition to the $119,000, which represented the discounts, we required of them $42,000 general collateral. That is, $42,000, as compared with $119,000 of indebtednesses which we were carrying. The reason we did that was that its condition was admitted to be much overextended. Nobody would contradict that a bank with a $17,000 basic line owing us $119,000 was overextended. That is six times.[164]

Surely as a protection to the funds of the other member banks and of the deposits of the Government the Reserve Banks have every right, when necessary, to demand excess amounts of collateral. The safeguarding of our banking system requires that they do this.

Iowa and the Reserve System. Smith W. Brookhart, now a United States Senator, but then representing the National Farmers' Union, declared before the Joint Commission of Agricultural Inquiry that the Reserve System, by which he presumably meant the Federal Reserve Bank of Chicago, arbitrarily reduced the amount which member banks in Iowa might borrow from 91 to 36 millions of dollars. He is not clear in his testimony but seems to imply that this allotment was by virtue of some provision in some act. Nor does he state definitely whether this allotment was for a year or for a fraction thereof.[165] A careful search fails to reveal data which in any way substantiates Brookhart's contention. In the *Ninth Annual Report of the Federal Reserve Board*[166] figures are given which show that the total amount of paper discounted for member banks in Iowa in 1920 amounted to 824 millions, in 1921 to 635 millions, and in 1922 to 198 millions of dollars.

The Charges that Governor Harding Speculated in Cotton. Then Senator Heflin brought forward the very serious charge that Governor Harding had been speculating for a fall in the price of cotton and was therefore actuated to favor a policy of drastic deflation.[167] A somewhat similar charge had been made against the officials of the Bank of Japan, who, it was claimed, induced deflation because they had gone "short" on the stock

[164] *Hearing before the Joint Commission of Agricultural Inquiry,* Vol. 3, pp. 769–770.

[165] *Ibid.,* Vol. 1, pp. 11 and 17.

[166] p. 122.

[167] See *The Commercial and Financial Chronicle,* August 26, 1922, p. 933.

market. Senator Heflin offered no proof to substantiate his contention. Governor Harding flatly denied this charge, a denial which was taken in very bad grace by the Senator.

The Reserve System and Profiteering. Another charge made against the officials of the System, which falls to the ground, was that they had profiteered. Those who made this charge were evidently ignorant of the provisions of the Act which govern the division of the Regional Banks' earnings. During the war the Reserve Banks were in the unusual position of being forced to earn huge sums by reason of the financial policies followed by the Government. Their earnings were thrust upon them. As is well known among students of the subject, the law requires that after a Reserve Bank has accumulated a surplus equal to 100% of its authorized capital, it must turn over 90% of its net earnings to the Government each year in the form of a franchise tax. In all the Reserve Banks have turned $135,387,941 over to the Government.

Salaries in the Reserve Banks. Former Comptroller John Skelton Williams stressed greatly the increases in salary which some of the officials of the Reserve Banks had received since their connection with the System, and the size of their incomes. He cited cases of persons connected with the Federal Reserve Bank of New York, whose salaries had risen from 200% to 594% since they had been with that institution.[168] An investigation conducted by the Reserve Board showed the average salary of the officers of the Reserve Banks, save in the case of the Richmond Reserve Bank, to be much lower than the average salary paid officers in the larger member banks in the Federal Reserve cities.[169] The size of the salary paid to the officers of the Reserve Banks is, after all, rather an inconsequential detail provided they are competent and are conducting the institutions along the most enlightened lines. Williams would have had a much stronger case if he had laid emphasis not on the "large" salaries paid officers but on the small size of the employees' wages. The wages of the clerks employed in the Reserve Banks are even lower than the pitifully small income of clerks employed by commercial banks, a wage much lower than might be earned by a factory employee. The size of the clerks' salaries has resulted in a very expensive labor turnover in the Reserve Banks, with resulting inefficiency and much dissatisfaction.

[168] *The Commercial and Financial Chronicle,* November 19, 1921, p. 2128.
[169] *Ibid.,* p. 2133.

The Publicity Fund. Another of the criticisms brought forward by Senator Heflin was that the Board had a publicity fund which they used to disseminate propaganda over the country. He even induced the Senate to pass a resolution calling for the details of the publicity fund of the Board, if one had been maintained.[170] His charges were flatly denied by the Board.

The Bank Rate and the Price of Liberty Bonds. Senator Owen was most critical of the increases in the Bank rate through the spring of 1920 for occasioning, as he claimed, the decline in the price of Liberty Bonds. He called attention to the fact that before the war United States 2% bonds sold above par, and that the normal rate of interest in Belgium was 3%. He asserted that the raising of the Bank rates forced member banks to increase their interest charges, all of which was responsible for the decline in the value of the bonds. The policy pursued by the Reserve Banks was responsible, so he claimed, for a loss to the bondholders of the country amounting to three billions of dollars.[171] In his statements Senator Owen assumed that the Reserve Banks had absolute control over all interest charges in the United States, on loans for commercial and investment purposes, for otherwise a lowering of their rates would have no effect on Liberty bond values. The assumption is also implied that the Reserve Banks could influence fluctuations in interest rates abroad, for otherwise a holder of a Liberty bond would dispose of it in order to obtain the higher yield offered by foreign securities. Viewed in this light his contentions become absurd. Further, he neglected, in his letters to the Board and in his speeches, to take cognizance of the fact that were the Reserve Banks to lower their Bank rates and inflation to continue, the purchasing power of the interest received by the bond-holding class would decline. We need only to refer to Germany to illustrate the extent to which bondholders and creditors in general are injured by a period of rising prices. Though rising interest rates might depreciate Liberty bonds temporarily, in the long run this would benefit the bondholder through an increase in the purchasing power of his interest. Then, of course, as the period of depression passes away the value of Liberty Bonds is certain to rise. Evidently none of these facts occurred to Senator Owen. It would, of course, be extremely dangerous for a central bank to be compelled to regulate its discount rate policy in order to support the price

[170] *The Commercial and Financial Chronicle,* June 10, 1922, p. 2537.
[171] *Congressional Record,* Vol. 59, pp. 6337–6338.

of government bonds. Before the war the Bank of France was compelled to govern its credit policies with this in mind but then we saw that France was not truly on a gold standard.

By way of answer to Senator Owen's criticisms the Board replied:

> In your letter of April 27th, you attributed the decline in the market value of Liberty Bonds entirely to the advance in discount rates at the Federal Reserve Banks, giving no consideration to the possible effect of the withdrawal from the market of the War Finance Corporation as a daily purchaser. In my letter to you of May 3rd, I ventured the prediction that "the policy of the Federal Reserve Board to curb inflation will, in the long run, result in improving the market value of Liberty Bonds and a contrary policy of furnishing credit at cheap rates at a time like this would impair the market. The value of a promise to pay a sum certain at a future date is impaired by the inflation which the Board is trying to control." In my letter to you of May 24th, I stated "the obligations of the Government of the United States offer the best opportunity for investment in the world today. They are being sold now on a most attractive investment basis, and as speculative tendencies are curbed, as the gains of the profiteers are reduced, as commodity prices decline, and as the business and industry of this country settle down to a more normal peace basis, the market value of these securities will rise very rapidly." A comparison of market quotations last May with those of the past week will show that Liberty Bonds have advanced several points.[172]

Liberty Bonds then were falling in price because of the low interest borne by the bonds in comparison with the rising interest rates over the world. Their prices would rise only as savings [173] accumulated, as the period of inflation was stopped and economic conditions once more put on a sound basis. By raising their Bank rates the Reserve Banks facilitated the necessary readjustment.

High Call Loan Rates and the System. Then the System was accused of encouraging or at least of doing nothing to prevent the very high call loan rates through 1919 and 1920. It was charged that the high rates attracted funds from the interior of the country to the detriment of agriculture and industry. Street loans placed for the account of out-of-town correspondents

[172] *Reply of the Federal Reserve Board,* etc., p. 13.

[173] See *Finance Report,* 1920, p. 121

reached a peak on the 21st of November, 1919.[174] From that time these loans steadily declined until they reached a point 50% below their high level. It is probable that the high level of call rates through the summer of 1919 did attract out-of-town funds. There is nothing to indicate, however, that the funds drawn into the call loan market were attracted to the deprivation of industry and agriculture. Funds were so plentiful at this time that any one with a legitimate claim had no difficulty in securing credit. The highest call rates did not occur until the latter part of 1919 and the first part of 1920 after the interior banks had begun to withdraw their stock exchange loans. It was the withdrawal of these funds to meet the requirements of industry and agriculture which sent interest rates soaring on the exchange, so the Joint Commission of Agricultural Inquiry reports.[175] Professor David Friday summed up the situation as follows before the Joint Commission:

> A New York bank president asked me what I thought was going to happen in January, 1920. I told him the New York money market was going to be very tight, that security prices were going to fall, that the New York Federal Reserve Bank was going below the legal limit from time to time; and that no wise banker would do otherwise than get under cover right then and there. . . . Interior banks had balances with New York in January, 1920, which were equal to the entire reserve deposits those banks had with the Federal reserve banks. Half of their funds were with the Federal reserve and the other half with New York banks. When the Federal Reserve Board said: "You put a check on this matter of rediscounts, you can not go on expanding any further," they took the money off the stock market, and took the money out of the New York banks, and put the New York situation under pressure.[176]

Among other things the Reserve System was even blamed for conditions in Europe and for the decline in American export trade.[177] It was accused of restricting loans for building opera-

[174] *Report of the Joint Commission of Agricultural Inquiry,* Credit, Part II, p. 137.

[175] *Ibid.,* p. 15.

[176] *Hearing before the Joint Commission of Agricultural Inquiry,* Vol. I, p. 242.

[177] See *The New York World,* June 19, 1922, p. 12.

tions. The oil interests were angry because the Banks would not consider some of their fixed assets as liquid. One Senator declared that the Board had abdicated all of its powers. The Reserve System had become a center for political intrigues and crossfires. It was being made a football of politics. The refusal to reappoint Governor Harding, all in all a worthy and hard-working public servant, is but an illustration of this point. The Reserve Board ought to be as much above the suspicion of political control as the Supreme Court of the United States. This will not be so if the tenure of its members depends on the whim of politicians and the plaudits or disapproval of the people. Those whose efficiency has been tested and proved should have a sure tenure. Since the tenure of membership on the Board is so uncertain, its caliber has been steadily declining. A much-needed and pressing reform is to appoint men of standing and capacity and to assure them of certain tenure of office. The Reserve System can not function so long as it serves as a means of rewarding deserving politicians, or of honoring bosom friends.

Investigations of the System. The criticisms of the agriculturalists led to a series of investigations of the administration of the System. The officials were called before investigating committees time and again. The most elaborate inquiry was that conducted by the Joint Commission of Agricultural Inquiry. Provision for the commission was made in a resolution which passed the Senate on May 31 and the House on June 7, 1921. The testimony before this committee has appeared in three volumes of nearly 2400 pages. Volume two (Part 13), which includes the testimony given by John Skelton Williams, Governor Harding and Governor Strong, has become quite famous. The Commission's report appeared in four parts. Part II, which deals very exhaustively with credit conditions from 1914–1921, exonerates the Reserve System completely from the criticism that the agriculturalists had been singled out for deflation.

Most of the critics of the Reserve System either stressed inconsequential details or themselves became involved in economic fallacies. The fundamental issues were either ignored or treated in a manner reflecting a measure of discredit on the critics. There was little constructive criticism of the policies instituted by the Board.

Hacking at the Reserve System. The criticisms of the Reserve System led to the introduction in Congress of a motley array of bills and resolutions, all designed with the purpose of

changing its structure.[178] Most of these measures were framed not with the object of improving the System but with the unworthy purpose of altering the provisions of the Act in the interests of certain groups. Thus some of the bills would allow the Regional Banks to discount paper of greater maturity, or would compel them to invest their surplus or earnings in paper arising from cattle loans and in the bonds of the Federal Land Banks. Others were introduced for the purpose of limiting and restricting the credit and discount policies of the System. The feeling seemed to pervade Congressional circles that credit and yet more credit was all that was necessary to solve the difficulties of those hard pressed by the business recession.[179] Credit was demanded

[178] For the recommendations of the Joint Commission of Agricultural Inquiry, see, *Credit,* Part II, p. 9.

[179] Some of the measures introduced were:

That earnings should be used to discount agricultural paper (66th Cong., 3d Session, S. 4665).

That a dividend of 8 per cent be paid on Federal Reserve Bank stock (67th Cong., 2d Session, H. R. 11229).

That reserves at F. R. Banks against deposits be reduced from 35% to 10%. Introduced by Senator Owen (67th Cong., 2d Session, S. 2915).

That agricultural paper be discounted at 4% (67th Congress., 1st Session, H. R. 7560).

That factors' paper be made eligible (67th Cong., 1st Session, H. R. 7829).

That interest charges at member banks do not exceed 8% per annum (67th Cong., 1st Session, H. R. 8841).

That the present members of the Federal Reserve Board be discharged and five be appointed who are not bankers (67th Cong., 1st Session. S. J. Res. 84).

That meetings of the Federal Reserve Board be open to the public (67th Cong., 1st Session, H. R. 4984).

That the Reserve Banks shall pay 2% on bankers' balances, or whatever their earnings will permit, (66th Cong., 2d Session, H. R. 12849). By the passage of such an amendment the Reserve Banks would at the present time be forced to earn 20 millions of dollars a year, over and above all their expenses, to pay the interest on bankers' balances. It is obvious that the compulsion to earn this amount would prevent the development of discount and credit policies.

That no member bank shall charge a rate of interest in excess of 6% on call loans (66th Cong., 2d Session, S. 3770).

That the net earnings of the Reserve Banks be used to purchase the debentures issued by the Federal Land Banks (66th Cong., 3d Session, S. 4562).

That powers of the Comptroller of the Currency be turned over to the Reserve Board (66th Cong., 3d Session, H. R. 14903).

for the farmer, that he might hold his crops, for the exporter that he might sell the farmers' products abroad. All looked to the Reserve Banks or to the Government directly to furnish the necessary funds. The country was to be made prosperous and contented at Uncle Sam's expense. The sponsoring of such measures was reflective of either an inability to see fundamentals or of a hypocritical intent to delude the agrarian elements of our population. In the discussions of the Agricultural Credits Bill Senator Norris very truly said:

> While rural credits, short-time credits, and intermediate credits are important—I realise it; I do not want to say anything detrimental to them—the great burden that is on the farmer today is that he is not able to pay from the product of his toil the debt that he already owes. If Congress would devote its time to an effort to seek out a market for the surplus products of America or to do away with the middlemen who live on the profits that they make from the time that the farmer's produce is put on the market until the consumer has to pay an exorbitant price for it, we should do more good for the producer and more good for the consumer than in any other way.[180]

As Senator Norris remarked, markets were of greater importance than additional credit facilities, and, he might have added, self-supporting markets and not those dependent upon grants of credit from the Government of the United States.

It would be an interesting and amusing task to delve into all of the measures introduced by those hacking at the Reserve System. For that, however, we shall not have time. We must content ourselves with a discussion of a few of the more significant proposals, those that particularly bear upon the discount policies of the Reserve Banks.

The Proposals to Limit the Bank Rate to Five Per Cent. In the Third Session of the Sixty-sixth Congress, Mr. Harris [181] introduced a bill in the Senate which would limit the maximum rate of interest which the Regional Banks might charge to 5% per annum. Similar bills were introduced in the House on

> That the net earnings be used to discount cattle loan paper maturing within two years (66th Cong., 3d Session, H. R. 14904).
>
> That member banks be prohibited from loaning money to be used in commodity speculation (66th Cong., 2d Session, H. R. 13680).

[180] *Congressional Record*, Unbound Edition, Vol. 64, p. 2938.

[181] Introduced December 7, 1920, S. 4560.

various occasions by Representatives Brand, Fulmer, McSwain, and Oldfield.[182] In Chapter II we saw that at one time there had been such laws in England and France. Until 1833 the Bank of England could not advance its Bank rate above 5%, and until 1857 the Bank rate at the Bank of France could not exceed 6%. These laws were repealed for it was recognized that they seriously impaired the efficacy of the Bank rate to rectify the foreign exchanges, to correct adverse balance of payments, and to check domestic speculative tendencies.[183] In a letter to Senator McLean, Chairman of the Committee on Banking and Currency of the United States Senate, Governor Harding declared [184] that the Board was

> unalterably opposed to this bill or to any other bill which in any way attempts to limit the power now vested in it and in the Federal Reserve Banks to regulate the rates of discount which those banks may charge.
>
> It is essential to the proper functioning of any central banking system that the central bank or banks of discount shall have complete control over their rates. This control over rates in normal times is the usual and most effective means of protecting the gold reserves of a country against withdrawals for foreign account, and in domestic transactions it insures the accumulation in normal times of a reserve sufficient to meet the seasonal and emergency demands of the central bank or banks. It is the general practice of central banks to fix their rates slightly above the market rates. This is particularly true of the Bank of England and in view of the frequent references which are made to this institution in public discussions it may be of interest to review its experience in the matter of discount rates since the passage of the Bank Act of 1844, as shown by the table on page 33 in a book entitled "Bank Rate and the Money Market" by R. H. Inglis Palgrave, F. R. S. The annual average bank rate of the Bank of England during the years 1845 to 1871, inclusive, was higher than the annual average market rate in sixteen of the twenty-six years and was lower than

182 66th Congress, 3d Session, H. R. 14480.
67th Congress, 1st Session, H. R. 6677.
67th Congress, 1st Session, H. Con. Res. 27.
67th Congress, 1st Session, H. R. 8841.
67th Congress 1st Session, H. R. 7361.

183 See article by author in the *New York Post*, February 4, 1922, Section Two, p. 3.

184 *The Commercial and Financial Chronicle*, December 25, 1920, pp. 2473–2474.

the annual average market rate in the other ten years, but from the year 1872 to the end of the period covered by the table, 1900, the average bank rate was higher than the average market rate in every year. From 1900 down to the present time the average bank rate has continued to be higher than the average market rate.

Up to the year 1833 the Bank of England was subject to the usury laws. In his book entitled "Essai Sur La Fondation Et L'Histoire de La Banque D'Angleterre, 1694–1844" Dr. A. Andreades, of the University of Paris, [*sic.*] refers, on page 361, to the release of the bank from the application of the usury laws and describes the conditions which led to this action by Parliament. The conditions then existing in England were not altogether unlike present conditions in this country, and it is noteworthy that instead of attempting to impose restrictions upon the bank, Parliament liberalized its powers and relieved it from the old restrictions which had seriously impaired its efficiency in dealing with the situation.

In explanation of the fact that the discount rates of the Federal Reserve banks are at the present time below the market rates it may be appropriate to quote the following from an address which I made to the American Farm Bureau Federation at Indianapolis on Dec. 7, 1920:

"Normally the discount rate of a Federal Reserve bank should not control the rates at which member banks loan money to their customers. In the countries which have central banks there is a well-established policy that the central bank discount rate should be maintained at a figure slightly in excess of the current market rate. The wisdom of such a policy is apparent for it eliminates all consideration of profit in rediscount transactions and gives the central bank better control over its own reserves and causes the banks which deal with the public to rely to a greater degree upon their own resources in extending accommodations while still affording them an outlet for any undue accummulation of loans. Because of the exigencies of war financing, it has not been practicable for the Federal Reserve banks up to this time to adopt this policy and as a rule Federal Reserve bank discount rates are lower than the rates charged by member banks. It is believed that conditions are gradually adjusting themselves so that Federal Reserve bank rates may be maintained at a level slightly higher than current rates not only without any disturbance to commerce and business but to their distinct benefit. In fact, this adjustment has already begun in some cities where member banks have reduced their rates on commercial paper."

The enactment of a law fixing the maximum rate to be charged by Federal Reserve banks at 5% would, of course, make it impossible to bring this necessary corrective principle into permanent operation, for it would be effective only at times when current market rates for money might fall below 5%. The Board desires to call your attention to the fact that only three States—Illinois, Louisiana, and Michigan—have a legal rate of interest as low as 5% and in each of these States a higher contract rate is permissible—Illinois and Michigan, 7%; Louisiana, 8%. In thirty-two States the legal rate of interest is 6%; seven States have a legal rate of 7% and in six States and in the District of Columbia the legal rate of interest is 8%. In eleven States—Arizona, Arkansas, Florida, Kansas, Minnesota, Nebraska, North Dakota, Oklahoma, Oregon, Texas and Wisconsin—a contract rate of 10% is allowed, and in ten other States—Colorado, Connecticut, Idaho, Montana, Nevada, New Mexico, South Dakota, Utah, Washington and Wyoming—12% is the contract rate. In seven States—Georgia, Indiana, Iowa, Mississippi, Missouri, Ohio and South Carolina—having a legal rate of less than 8%, a contract rate of 8% is allowed. Four States—California, Maine, Massachusetts and Rhode Island—permit any rate to be charged under contract, and in New York any rate agreed upon in writing is legal on collateral demand loans of $5,000 and over.

The theory that discount transactions should yield a profit to the member banks is a fallacy which owes its wide credence in part to the fact that the Federal Reserve banking system, which has some of the attributes of a central banking system, is comparatively new, and partly to the abnormal times through which we have passed, the inevitable effects of which are now being experienced. The fact is, however, that the potential profits of the member banks should not be permitted to influence the determination of the Federal Reserve bank rates. On the contrary, member banks should rely mainly upon their own resources in normal times in order that when seasonal and emergency demands do arise the reserves of the Federal Reserve banks may be available to meet those demands and sufficient to prevent the emergencies from developing into panic conditions. In this connection your attention is invited to an editorial which appeared in the Dallas (Texas) "Morning News" of Friday, June 11, 1920, copy of which is enclosed herewith.

If Federal Reserve bank rates were fixed at 5% at the present time there would undoubtedly be a very strong incentive to the

member banks to utilize to the utmost the rediscount facilities of the Federal Reserve banks, because in an 8% money market there would be a spread of 3% between that rate and the Federal Reserve bank rate which would represent a profit to be derived by the member banks on rediscount transactions. In States which have no important financial centers but in which rates as high as 10 and 12% are authorized by law, the incentive to rediscount with the Federal Reserve banks would be even greater. It is the opinion of the Federal Reserve Board, confirmed by past experience, that the lowering of the Federal Reserve bank rates to 5% would have but very little if any effect on the market rates which could not be fixed by legislative enactment but which are determined by the inevitable operation of the law of supply and demand. Nor are banks generally inclined—particularly banks in agricultural sections—to give their customers the benefit of Federal Reserve bank discount rates. It should be borne in mind also that with Federal Reserve bank rates at 5% the incentive to speculation would increase the demand for credit and the net result would be that borrowers for legitimate commercial and agricultural purposes would find it difficult and expensive to obtain credit. Ultimately, of course, the limit of expansion would be reached, and in the Board's opinion it would be reached within a very short time, for it must not be forgotten that there are about $25,000,000,000 of Government obligations available as collateral for loans eligible for rediscount by Federal Reserve banks. If the limit of expansion should be reached, the Board believes that a condition of depression infinitely more serious and more widespread than that now existing would follow.

The Board calls the attention of the Committee to the fact that the bill under consideration would operate as a repeal of the provisions of Section 11 (c) of the Federal Reserve Act which requires the Federal Reserve Board to impose a graduated tax upon a Federal Reserve bank whenever its reserves fall below a specified minimum, the Federal Reserve bank being required "to add an amount equal to said tax to the rates of interest and discount fixed by the Federal Reserve Board." If the bill under consideration were enacted, 5% would be the maximum rate a Federal Reserve bank could charge even if its reserves were rapidly dwindling to the vanishing point.

In conclusion and by way of summary, if this bill should become a law it is the Board's firm belief that the Federal Reserve banks would find it impossible while functioning in a normal way to pro-

tect their gold reserves, that the Federal Reserve system would within a very short time cease to be in any sense a reserve system and would become a mere instrument for the acceleration and perpetuation of expansion, and that a wholesale scramble for the funds of the Federal Reserve banks would ensue which would leave those banks only two alternatives—one, to lend their funds at the rate prescribed until the exhaustion of their reserves had been completed, and the other to fix a definite limit upon their total volume of loans, thus adopting a rigid system of credit rationing. In the one case they would reach a point where they would be unable to make further rediscounts no matter how insistent or meritorious the demands might be, and in the other they would find it necessary to place all applications for discount accommodations on a waiting list until repayment of prior loans made new funds available.

Likewise, Carter Glass declared in the Sixty-Seventh Congress, Fourth Session, when it had under consideration a similar amendment offered by Senator Heflin, that the passage of the bill would throw everything into financial chaos and confusion. "It would," he asserted, "break down the Federal Reserve banking system of the United States." [185] Senator Glass did not overexaggerate the effects of legislation restricting the level to which the Bank rate might be raised. If such legislation were enacted the Reserve Banks in order to mitigate the amplitude of cyclic fluctuations would be forced to resort to such tactics on the upward sweep of the cycle as the downright refusal to discount paper and the application of stricter credit tests. During the crisis the Reserve Banks would have to discount liberally with their Bank rates so far below the market as to risk a recrudescence of speculation. The better judgment of the legislators prevailed and both Senator Harris's and Heflin's motions were lost.[186]

The Proposal for a Uniform Bank Rate. Another amendment which would have greatly weakened the efficacy of the credit policies of the Reserve Banks, and which was introduced also by Senator Harris,[187] provided that the Board establish a Bank rate uniform for the twelve districts. The Aldrich Bill, as will be remembered, provided for a uniform Bank rate, as indeed did

185 *Congressional Record,* Unbound Edition, Vol. 64, p. 2918. For Secretary Mellon's opinion of such measures as this, see *Hearing before the Joint Commission of Agricultural Inquiry,* Part 13, p. 2919.

186 *Congressional Record,* Vol. 62, p. 1270; and Vol. 64, Unbound Edition, p. 2919.

187 *Ibid.,* Vol. 62, p. 1270.

some of the earlier drafts of the Reserve Act. In allowing the Bank rates to vary in the different districts lay one of the chief virtues of the Reserve Act. They could be adjusted to the economic development of the different sections of the nation. The Reserve Board was in unanimous opposition to this amendment. In a letter to Senator McLean, Governor Harding stated:[188]

> As is well known, when the Federal reserve bill was being drafted much consideration was given to the question of whether there should be one central bank with branches or a regional system composed of several independent banks located in various parts of the country. The regional system was adopted, because it was thought that this country, with its wide expanse of territory and its varied and diversified interests, was not suited to a central banking system under the management of a single board of directors. It is generally recognized now, even by those who originally advocated a central bank, that the decision was a wise one. Should the amendment in question be adopted an initial step will be taken in destroying the regional character of the Federal reserve system and there would be imposed upon the Federal Reserve Board the difficult task of fixing rates of discount to be uniform and apply universally throughout the entire country without regard to temporary or seasonal conditions prevailing in the various sections. The board under its power of review already has the power to fix discount rates, which are first proposed by the directors of the various Federal reserve banks, and while at the present time the rates do not vary greatly in the different districts, it is easily conceivable that conditions may arise which would render greater differentials advisable. Under the present law the board shares the responsibility of establishing discount rates with the directors of the banks in the different districts and has the benefit of their independent judgment. To impose upon the board the sole power of fixing discount rates, as provided in the amendment under consideration, would be a step toward further centralization of authority and any requirement that the rates fixed be uniform throughout the country would be a grave complication which would often render it impossible for the board to do justice to all sections alike, and the board's unanimous opinion is that the establishment of discount rates under such an arbitrary plan would be unscientific and dangerous.

[188] *Congressional Record,* January 17, 1921, p. 1266.

With reference to Senator Harris's proposal the Federal Reserve Bank of Minneapolis has very truly said:

> Obviously the same Bank rate cannot be charged in Massachusetts and Montana because of the difference in conditions. In the partially developed sections capital is scarce and credit is limited. The Northwestern states have for years found it highly beneficial to attract eastern money by making favorable rates. Country bank deposits have benefited because the rate on time certificates in many hundreds of instances has been substantially higher than savings bank rates east of the Mississippi River. This has tended to bring in outside money for the benefit of communities that need it. An equal or uniform level would naturally destroy this advantage since individuals in the East having surplus funds could employ them at the same rate at home and there would be no reason for sending money out into the West. A certain uniformity in Federal Reserve discount rates may ultimately work in an indirect way to a better adjustment of commercial bank rates over the country as a whole.
>
> Such uniformity as is possible has recently been effected. A group of Federal Reserve Banks in the wealthier eastern sections have announced reductions in their rediscount rates to a flat 4½% basis. A second group of reserve banks which stand between the well developed East and the partially developed West have announced a new rediscount basis of a flat 5% rate. The remaining Federal Reserve Banks, located in territory that is wholly or largely agricultural, or given over to live stock, have gone to a 5½% basis. The Federal Reserve Bank of Minneapolis is in the latter group. The differential between Minneapolis and New York in Federal Reserve rates is 1% and represents a difference which should normally be maintained. Federal reserve rates are already uniform, therefore, as to the areas in which conditions are similar but there has been no attempt to ignore the obvious difference in development, in financing requirements or in credit conditions. The stepping up process from East to West has placed Federal reserve rediscount rates at last upon the basis which they would have assumed long ago if war had not intervened. It is probable that this general basis will be maintained in the future but not in any hidebound or arbitrary way since each Federal Reserve Bank enjoys an absolute independence in the fixing of rates in its own district and must necessarily adjust such rates in such a way as its Board

of Directors and officers believe will best serve the interests of its district.[189]

While the Reserve Board and the Reserve Banks are quite correct that a uniform Bank rate is impossible for America, and that the rates should vary from district to district, in practice they have not made fullest use of the regional plan of organization. Quite frequently Bank rates in the Western districts, as we have remarked from time to time, have ruled below the Bank rates prevailing in the financial districts of the East. If the Bank rates were to be set slightly above market rates in the various districts this could not occur.

The Dirt Farmer Amendment. The Glass Bill, as it passed the House of Representatives in 1913, provided that the Secretary of Agriculture was to be a member of the Reserve Board. This provision was eliminated by the Senate and in the Act as finally enacted. During the first six years of the Reserve System, when the farmers were blessed with prosperity, no criticism was raised because agriculture was not directly represented on the Board. But once agricultural prices started tumbling the feeling grew that the interests of the farmers were not adequately voiced and that they as a class should have one of their own members on the Reserve Board. This belief culminated in a bill[190] sponsored by the agricultural bloc, which enlarged the Board from seven to eight members, and which directed the President, when appointing members, to have a due regard to the financial, agricultural, and commercial interests and the geographical divisions of the country. Further, the provision in the original Reserve Act that at least *two* of the members must be experienced in banking or finance was omitted. There was an understanding, of course, between the supporters of this measure and the President that the new appointee should be the representative of the "dirt" farmers of the country.

The members of the agricultural bloc expressed it as their belief that it would be helpful to have one representing the farmers on the Reserve Board. Doubtless they meant that such a person might be able to influence the Board to cause the funds of the system to be lent more freely and easily for agricultural

[189] Letter dated November 12, 1921, signed by John H. Rich, Agent of the Federal Reserve Bank of Minneapolis, and sent to the Editor of the *Pioneer Press*, St. Paul, Minn.

[190] Signed by President Harding on June 3, 1922.

purposes. How the Board could favor the farmers more than they had, without ruining the System, is indeed difficult to see.

In testifying before a subcommittee of the Senate Committee on Banking and Currency, Governor Harding declared that the Board had always been sympathetic with the interests of agriculture, and that the President had every right without additional legislation to appoint a dirt farmer when his own term expired. He called the attention of the committee to the fact, as it was, that two members of the Board were partially engaged in agriculture and ranching. He gave four reasons for his opposition to the bill.[191]

1) That the membership would be fixed at an even number which would be embarrassing in case of a tie vote. The Reserve Board should have an odd number of members as does the Supreme Court.
2) That it was class legislation. "Where will we stop if agriculture as such is given by law the right always to have a member on the Federal Reserve Board to represent that particular interest? Why should not other large interests in the United States be equally entitled to representation on the Board? Why should not the motor industry be entitled to representation? If you begin with legislation of this sort you will have a Federal Reserve Board made up of an aggregation of special interests and the members will be swapping favors with one another— 'You favor a ruling of this sort for my industry and I will help you to get a ruling of this sort for your industry.'"

"My conception of the Federal reserve act is that class was not to cut any figure. It was a banking act for the benefit of the whole people and we believe that this legislation will be subversive of that."

"From another point of view we think this altogether unnecessary. We deny the charge, which has been so frequently made, and which has never been supported by facts, that the Federal Reserve Board has in any way discriminated against agriculture. On the contrary the discrimination, if any, has been distinctly in favor of agriculture, and I have the figures here to prove it." [192]

3) That the farmer would be doomed to disappointment for his representative on the Board would be unable to render him greater assistance than had been accorded up to that time. "What could

[191] See *Amendments to Farm Loan Act and Federal Reserve Act* pp. 37–39 and 50–51.

[192] *Ibid.*, p. 38.

a representative of agriculture do on the Federal Reserve Board any more than has been done already? If he wanted to do anything of a very radical nature, the rest of the members could outvote him. He would be powerless to accomplish anything without their cooperation." [193]

4) That the bill was contrary to the spirit of the Act and had its origins in a misconception of facts. It was the spirit of the Act that the Board should represent no one interest or class but should administer its duties with the good of the whole country in mind.

The debate in the Senate on this measure centered chiefly around such *germane* topics as the salaries paid the officers of the System, the cost of the buildings housing the Reserve Banks, and the Muscle Shoals project. A few discussed the bill. Senator Kenyon laid emphasis upon the psychological benefits to be derived: [194]

There is a psychology about the whole thing. The condition of the farmer has been spoken of here so much that there is no use going into it now; but, whether justified or not, there is a belief on the part of the farmer that he is not receiving a square deal at the hands of the Federal reserve system. He is not against the system, and no one else is against the system; but with all of these members on the board, two being required under the law to be bankers, how can it be held class legislation if we determine that there shall be a farmer on the board?

If I had time to read the Republican platform of last year, I could cite a declaration in that platform that would sustain this legislation. In his speeches the President has committed himself to the proposition, and has appointed a farmer, or a representative of agriculture, on the Interstate Commerce Commission, and will unquestionably appoint a representative of agriculture on the Federal Reserve Board. It is not going to accomplish a great deal, as the Senator from Nebraska and the Senator from Connecticut have said. It is not going to remedy all the ills that the farmer is suffering from. It will simply be helpful, and if this Federal reserve system is to be a great superlord of government and a great supergovernment in this country building up this industry, destroying that one, then it is proper that all of the various interests of the country be represented thereon.

[193] *Amendments to Farm Loan Act and Federal Reserve Act,* p. 51.
[194] *Congressional Record,* 1922, p. 1267.

Senator Norris indicated in a very able manner that the bill had been given an importance vastly beyond that which it deserved:[195]

> To my mind, the bill has been given an importance vastly beyond what it deserves. I do not think anything will be accomplished by it, even if the bill and all of its amendments and all of its substitutes should become law, and yet I am in entire sympathy with what the bill or those who are behind the bill and the amendments are trying to accomplish. They want to get more consideration for agriculture. They feel that agriculture has not been treated fairly. I agree with both of those propositions. So it has been proposed to introduce a bill which will provide that a farmer shall be placed on the Federal Reserve Board, a man who is a really, truly, dirt farmer, as is said.
>
> The farmers of the country have been given to understand that they are going to get great relief by the passage of the bill and get representation on the Federal Reserve Board. They are going to be fooled again. There will be no relief any more than there is now so far as the Federal Reserve Board is concerned. After all, we can not by a legislative act take away the discretion that is vested in the appointing power. Under the law as it stands now the President can appoint all farmers, practically, with the exception of two—yes; he could get all farmers as members of the Federal Reserve Board if he desired.
>
> If we enact a law that will say in so many words that he must appoint one farmer, he can comply with the law and appoint a farmer who will be the worst enemy that the farmers ever had on the board. There is no doubt about that.
>
> The President without any change in the law can appoint a man who is not a farmer who will be the best friend that the farmers have when he gets on the board. In other words, it will not be difficult to go out and pick a farmer or a lawyer or a preacher or a banker or a manufacturer and get a man who will be fundamentally, from the bottom of his heart, out of sympathy with the particular line of business with which he is identified and classified.
>
> It is said we will have a farmer on the Federal Reserve Board, and after that everybody in agriculture will prosper. But, Mr. President, the appointing power could select a farmer who is more reactionary than any Wall Street banker that ever lived, if he wants to do that. There are plenty of them whom he could get.

195 *Congressional Record,* Vol. 62, p. 1195.

On the other hand, without having the law designate that a farmer must be appointed, the President could appoint somebody who is a farmer, who is a lawyer, who is a preacher, who is a manufacturer, and by that very act appoint somebody who is in entire sympathy with agriculture and would comply entirely with those conditions that those who are favorable to assistance to agriculture would desire.

So, after all, in my judgment it is nothing but camouflage; and, while I may probably vote for some of the proposed substitutes, so far as I am concerned I shall do so more as a protest against the action of the Federal Reserve Board in the last two or three years than for any other reason. I myself think the Federal Reserve Board deserves criticism, and I think the feeling that it deserves criticism has brought about the sentiment which is behind this bill. Yet the bill itself can not directly accomplish anything.

Senator McLean offered it as his opinion that meddling in the affairs of the System would cause the larger member banks to withdraw [196] and all that "any pirate of Wall Street" need do to qualify as a member, were the amendment passed, was to own a ten-acre farm.[197] Senator Edge offered two amendments [198] to the proposal, one compelling the President to appoint a manufacturer on the Board and the other an official of organized labor. If it were desirable to have the farmers represented it would be just as logical, or illogical, to have labor and industry represented.

In the House discussions Mr. Swing declared that the Reserve System had deliberately deflated the farmer.[199]

Mr. Chairman and gentlemen of the committee, this proposal to add an additional member to the Federal Reserve Board is here because there is an urgent need that agriculture and its interests be heard by this board.

I cannot understand how men can continue to deny that the deflation policy adopted by the Federal Reserve Board was not deliberately aimed at the farmers of this country. I was present at a meeting of the bankers of southern California, held at El Centro,

[196] *Congressional Record,* 1922, p. 1260.
[197] *Ibid.,* p. 522.
[198] *Ibid.,* p. 525.
Rep. London introduced a similar resolution in the House (*Congressional Record,* 67th Cong., 2d Session, p. 7520). The vote was, 21 ayes and 47 noes.
[199] *Ibid.,* p. 7517.

in my district, in the middle of November, 1920, when W. A. Day, then deputy governor of the Federal Reserve Bank of San Francisco, spoke for the Federal reserve bank, and delivered the message which he said he was sent there to deliver. He told the bankers there assembled that they were not to loan to any farmer any money for the purpose of enabling the farmer to hold any of his crops beyond harvest time. If they did he said the Federal reserve bank would refuse to rediscount a single piece of paper taken on such a transaction. He declared that all the farmers should sell all of their crops at harvest time unless they had money of their own to finance them, as the Federal reserve bank would do nothing toward helping the farmers hold back any part of their crop, no matter what the condition of the market.

This bill has established a dangerous precedent. We may expect to see other classes in the community, as they gain in political power, demand representation on the Reserve Board.

Amendments Permitting the Discounting of Paper of Longer Maturities. Many of the bills offered through this period would permit the Reserve Banks to discount paper having its origin in agricultural and live-stock transactions of longer maturities.[200] Governor Harding was decidedly opposed to all such measures. While appearing before the House Committee on Banking and Currency his opinion regarding the advisability of increasing the maturity limit on agricultural paper from six to nine months was sought. He replied:

We [the Reserve Board] have discussed that and we feel that would be inadvisable. In the first place, there is nothing in the law to prevent the renewal of six months paper. If six months is not long enough let them renew for three months, but this thing was all thoroughly considered at the time the act was originally drafted. It is a commercial banking proposition, and you must recollect, after all, that all these banks have demand obligations to their depositors. There has not been much said about the bank depositor in the last year or two and yet he has got to be considered; and if you extended the time on notes which are eligible for discount at the Federal reserve bank to nine months, somebody will say, "Why not make it a year?" And the first thing you know

[200] An amendment offered by Senator Smith permitting the Reserve Banks to discount twelve months paper was rejected in the Senate by only three votes. The vote was 33 yeas, 36 noes, and 37 not voting. (*Congressional Record,* Unbound Edition, Vol. 64, p. 2937.)

they will want two years in order to take care of the breeding of cattle which ought to be taken care of; but I do not think that is the way to do it. If you open the doors you will let in building operations and everything of that kind, and get the Federal reserve system so waterlogged that it would not be of any use to anybody.[201]

Governor Harding was quite correct in his assertion that the Reserve Banks should not be employed to take care of the long-term needs of the country. If necessary separate, and distinct banking institutions should be devised to meet these requirements. Nearly a year and a half after Governor Harding had made this statement acting-Governor Platt of the Reserve Board urged that the Act be amended permitting the discounting of nine months' agricultural paper. As a justification for his stand he declared that changes in marketing practices warranted the discounting of paper of longer maturity. He also ventured the prediction that such a provision would likely have little effect upon the average maturity of paper discounted by the System.[202] Even though the actual effect might be very slight the danger lies in the precedent established.

The Agricultural Credits Act. The desire on the part of various factions to amend the Act culminated in the passage of the Agricultural Credits Act, approved on the 4th of March, 1923. While possessing good features the bill is reflective of great haste. Its provisions were doubtless thrown together at the last moment and railroaded as it were through Congress. Sufficient thought and careful deliberation were lacking. It amended the Reserve Act in the following particulars:[203]

1) With the purpose in view of increasing the membership in the Reserve System one provision would permit state banks and trust companies to join provided that their paid-up and unimpaired capital amounted to but 60% of the amount sufficient to entitle such a bank to become a member of the national banking association in the place in which it happened to be situated. In such cases, however, the state bank or trust company had to increase its capital each year by an amount to be determined by the Board, but to be not less than 20% of its net earnings.[204]

[201] *Amendment to Abolish Office of the Comptroller of the Currency*, etc., p. 27.

[202] *The Commercial and Financial Chronicle*, Dec. 23, 1922, p. 2744.

[203] For full text of these amendments see Chapter Three.

[204] It was estimated that the passage of this amendment would increase

As we have so frequently indicated it is not desirable to have all banks as members of the System. Only those whose business is of a commercial character should be allowed to become members for, to the extent that banks with predominantly investment characteristics join, the liquidity of the Reserve Banks will become impaired.

2) The Reserve Banks were permitted to discount or purchase demand drafts endorsed by a member bank and secured by readily marketable agricultural products. Such bills might be held by the Reserve Banks for periods not exceeding ninety days.

3) Notes, drafts and bills of exchange issued by factors making advances exclusively to producers of staple agricultural products in their raw state were made eligible for discount.

4) Acceptances collateralled by warehouse receipts securing title to readily marketable agricultural products were permitted to be discounted by the Reserve Banks if having a maturity of six months.

5) The Reserve Banks were permitted to discount notes, drafts and bills of exchange arising from agricultural transactions or based on live stock, having a maturity not exceeding nine months at time of discount. The notes, drafts and bills of exchange of cooperative marketing associations were to be deemed as having been issued for agricultural purposes.

6) A Reserve Bank might rediscount notes, drafts and bills for any Federal Intermediate Credit Bank excepting those which bore the endorsement of non-member state banks which were eligible for membership.

7) A Reserve Bank was permitted to buy and sell debentures and other such obligations issued by a Federal Intermediate Credit Bank or by a National Agricultural Credit Corporation.

8) Whenever the Board declares that the public interest so demands the Reserve Banks are permitted to purchase and sell in the open market acceptances of the Federal Intermediate Credit Banks and of National Agricultural Credit Corporations.

9) A joint Congressional Committee to be composed of three members of the Banking and Currency Committee of the Senate to be appointed by the President of the Senate and five members of the Banking and Currency Committee of the House to be appointed by the Speaker of the House, was provided for to inquire into the

the number of state banks eligible to join by 3830. Before its passage, 1595 state banks belonged to the System, and 9640 were eligible for membership on the basis of their capital. Even with the passage of the amendment, 5829 state banks would not be eligible. (*Congressional Record,* Vol. 62, pp. 9742–9743.)

effects of the present limited membership of state banks and trust companies upon financial conditions in agricultural sections and the reason accounting for the failure of state banks eligible for membership to join.

The changes brought about will avail the farmer but little. Foreign markets for his products can not be created by providing additional credit facilities for him in the United States.

Recrudescence of Inflation. In January of 1922 the wholesale price index prepared by the United States Bureau of Labor Statistics fell to 138, its low point. For seven months previous to that time it had hovered around 140, 141 and 142. By February 1922, it advanced to 141 and thereafter it increased from one to five points a month until it reached 159 in March of 1923.[205] From January of 1922 to March of 1923, an interval of fifteen months, prices rose from 138 to 159, an increase of 15%.

This rapid rise in prices, resulting mainly from continuing imports of gold, led many to fear the dangers of another period of inflation as severe indeed as was the rise in prices through 1919.[206]

Through 1922 and the first five months of 1923 total net imports of gold amounted to 329 millions of dollars. These imports permitted member banks to expand [207] without at the same time being forced to increase their rediscounts with the Reserve Banks. In fact, according to the *Bulletin* it was not until May 1923, that the expansion of credit at member banks reached a point beyond which they would be forced to rediscount at the Reserve Banks.[208] The situation was quite analogous to the period immediately preceding America's entrance into the world war. At first member banks expanded through increasing their investments. Later they disposed of their security holdings that their loans and discounts might expand.

[205] As prices rose more rapidly in America than England, pound sterling appreciated through this period. The dollar depreciated (See *Monthly Review,* London Joint City and Midland Bank, Limited, April 30, 1923, p. 3.)

[206] See the monthly bulletin issued by the National City Bank; March, 1922, p. 15; October, 1922, p. 10; January, 1923, p. 9; April, 1923, p. 51. As opposed to this point of view, in September of 1922 the Federal Advisory Council declared that no inflation was at hand. (*Ninth Annual Report of the Federal Reserve Board,* p. 412.)

[207] Sir George Paish expressed the idea that banks had not expanded rapidly enough. (The *New York Times,* October 25, 1922, p. 21.) Of course to the extent that, by reason of the expansion of credit, prices rose in America faster than in England, pound sterling would appreciate.

[208] *Federal Reserve Bulletin,* 1923, p. 543.

INVESTMENTS, LOANS AND DISCOUNTS OF ABOUT 800 REPORTING MEMBER BANKS [209]

		(000,000 omitted)	
	Number	*Investments*	*Loans and Discounts*
1922 January 25	804	$3015	$10,919
March 29	804	3702	10,842
May 31	799	4123	10,906
July 26	794	4450	10,739
September 27	790	4466	10,988
November 29	784	4542	11,219
1923 January 31	780	4849	11,440
March 28	777	4715	11,783
May 29–30	774	4650	11,840
June 20	774	4691	11,790

The growth in the investments of the reporting member banks resulted mainly from increased purchases of United States Government securities.

HOLDINGS OF U. S. SECURITIES BY REPORTING MEMBER BANKS
(000,000 omitted)

1922 January 25	$1503
March 29	1610
May 31	1835
July 26	2126
September 27	2219
November 29	2293
1923 March 28	2553
May 29–30	2501
June 20	2551

The total investments of the reporting member banks increased then by 1100 millions of dollars from January 25, 1922, up to March 28, 1923. Of this increase 1050 millions are represented by purchases of U. S. securities. The loans and discounts of the reporting member banks declined during the first half of 1922, reaching a low point on August 30, and did not begin to increase until September. By May 29–30, 1923, the loans and discounts had increased over their low point by more than 1100 millions of dollars.

Action of System during Rise in Prices. The System did

[209] *Ninth Annual Report of the Federal Reserve Board,* pp. 169–170. *Federal Reserve Bulletin,* 1923, pp. 117, 384, 634, 845. For a discussion of the factors promoting this increase in investments, see *Annual Report of the Federal Reserve Bank of New York,* 1922, p. 8.

little to check the upward rise in prices. Indeed, its actions were such as to accelerate it. Nothing so illustrates the lack of definite credit and discount policies on the part of the Reserve Banks as their actions through this period. Through 1922 the Bank rate at all but one (Philadelphia) of the Reserve Banks was lowered at least once and in the case of three Reserve Banks it was lowered twice.[210] On the 22d of June the Bank rate in New York was lowered from 4½% to 4%, though prices had risen by twelve points since January. Even surpassing this in fatuity was the fact that the Reserve Banks vigorously increased their open-market operations. On January 31, 1922, their holdings of purchased bills amounted to seventy-five millions and United States securities to 914 millions of dollars. By the end of the year their holdings of the former totalled 272 millions and of the latter 436 millions.[211] They went into the open market at precisely the wrong time,[212] at a time when member banks were possessed of sufficient funds and were themselves purchasing United States securities heavily. Not only that, but the Reserve Banks, through the first part of this secondary period of inflation, clung tenaciously to their stock of gold, paying out gold and gold certificates only when specifically demanded. The Federal Advisory Council had on two occasions recommended that the System follow this policy.[213] Even the Treasury Department had held this view early in 1920,[214] but later seemed to have abandoned it. Eventually, about August 1922, in response to pressure of some sort, the Regional Banks did begin to circulate their holdings of gold certificates. During December, acting-Governor Platt of the Reserve Board informed the country that the System invited a revival of the practice of giving gold coins as Christmas gifts.[215] From August 1, 1922, to June 1, 1923, the amount of gold cer-

[210] The Reserve Banks might justify this on the ground that production was increasing and that therefore conditions were basically sound. It is true that production was increasing, but with prices rising Bank rates should have been raised to conserve the period of prosperity. For indices of production and credit, see *Monthly Review,* Federal Reserve Bank of New York, May, 1923, p. 8.

[211] This action the Reserve Banks might justify on the ground that it was necessary to earn their expenses. With their large surplus funds this argument is not tenable.

[212] The Federal Advisory Council was of the opinion that the Reserve Banks should not purchase government securities heavily. (*Ninth Annual Report of the Federal Reserve Board,* p. 410.)

[213] *Eighth Annual Report of the Federal Reserve Board,* p. 687. *Ninth Annual Report of the Federal Reserve Board,* p. 407.

[214] *Federal Reserve Bulletin,* 1920, p. 454.

[215] The *New York Times,* December 2, 1922.

tificates in circulation increased from 172 millions of dollars to 339 millions.[216] The "yellow-backs" once again came into more or less general use. It should become a part of the credit policies of the Reserve Banks to circulate gold and gold certificates and to cease issuing Reserve notes during an upward movement in prices, mainly because this policy will cause the reserve percentage to decline more precipitously than the issuing of Reserve notes,[217] and will consequently impress upon the business community the need for restraint.[218]

It was not until February 23, 1923, that the Federal Reserve Bank of New York took its first step to combat the rise in prices by raising its discount rate from 4% to 4½%.[219] That the inflationary movement was checked and that prices did not continue upward was not due so much to the policies of the Reserve Banks as it was to the good sense of the business community. They had not forgotten the consequences following the rapid rise of prices through 1919. They had no desire to pass through another such serious depression. Consequently they exercised restraint.

SUMMARY

The post-war period was particularly trying for the Reserve Banks. In the first part they were compelled by the Treasury Department to continue those inflationary policies adopted during the war. It was then that they were hailed as the saviors of America without which public and private finance would come to a standstill. This was the heyday of their popularity. Following this period America was plunged into one of the most serious business depressions in her history. In many quarters the System loomed up as cause of the hard times and as a hideous monster sucking the life blood of the American people. In

[216] *Federal Reserve Bulletin,* 1922, p. 1138; and 1923, p. 854.

[217] Such a policy would also counteract the innate tendency of the Reserve notes to expand. See Hawtrey, *Monetary Reconstruction,* p. 118.

[218] A proposal to revive the old commodity rates was fortunately opposed by the System. (*Ninth Annual Report of the Federal Reserve Board,* p. 411.) It was opposed by all but one of the Reserve Banks. See *Journal of Commerce,* (New York), August 22, 1922, p. 11.

[219] This action did have considerable psychological effect. See *New York Evening Post,* February 24, 1923, Section Two, p. 1. Editorially the *Journal of Commerce* (New York) declares this rise was insufficient and too long delayed, (February 28, 1923, p. 8). There was strong political pressure for low rates. Politicians pointed to the Bank of England's 3 per cent rate and asserted the Bank rate in America should be reduced to that figure. It was not mentioned that the two rates are not comparable.

consequence of this feeling, the activities of the Reserve Banks were investigated from alpha to omega by the Joint Commission of Agricultural Inquiry. The result was its complete exoneration from the charges raised by the ardent agriculturalists. All danger, however, that the Reserve Act may be seriously damaged by Congressional action has not passed. Scarcely a day passes without some well-meaning but uninformed Senator sponsoring damaging proposals. To paraphrase a famous statement, the price of a good banking system is eternal vigilance.

The critics quite overlooked the good wrought by the System through the deflation period. It was the first serious depression since the Civil War which was unaccompanied by a panic. The absence of a panic and of a large number of bank failures [220] exhibited as nothing else could the staying power and strength of our renovated banking system.

One of the chief criticisms of the System in the deflation period lies in the contradictory attitude of the Board on matters of theory. They reversed their stand at least twice as regards the efficacy of the Bank rate. The *Bulletin* wavered and vacillated and in general seemed to follow the tide in order to appease popular wrath. The sound administration of a reserve banking system is impossible unless based on theories which are at once definite and clear.

In addition to the lack of well-defined theories, other criticisms of the policies of the System through this period are:

1) The maintenance of the Bank rate below the market.
2) Permitting the borrowing Reserve Banks through 1920 to maintain lower Bank rates than the lending Reserve Banks.
3) The rapid reductions in the Bank rate through 1921.
4) The delay in raising the Bank rates during the secondary period of inflation.
5) The establishment of uniform rates for all discounts and advances irrespective of the maturity and nature of the underlying transaction.

[220] BANK FAILURES

Year (*Fiscal*)	*State and Private Institutions*	*National Banks*
1918	25	2
1919	42	1
1920	44	5
1921	330	28
1922	364	33

Annual Report of the Comptroller of the Currency, 1922, p. 944.

6) The lack of any policy on the part of the Board towards inter-district rediscounting.

7) The reluctance on the part of the Reserve Banks to pay out gold and gold certificates during 1922.

8) The expansion of open-market operations through 1922 and 1923.[221]

[221] In the *Federal Reserve Bulletin* for January 1924 (pp. 3–4) the Board editorially had the following to say regarding its open-market policies:

At the Federal Reserve Banks discounts increased rapidly during the year [1923], but there was a corresponding decline in open market holdings, with the result that total earning assets remained relatively stable. In fact, as shown by the chart, relative stability in the total volume, with changes in the composition, has been the principal characteristic of Federal Reserve Bank assets during the past two years. During these two years the country steadily used from $1,000,000,000 to $1,200,000,000 of Reserve Bank credit.

. . . . . .

Federal Reserve credit policy during the year has been reflected chiefly in open market operations. As the aggregate demand of the country for Reserve Bank credit may be met either through rediscount or open market operations, the Federal Reserve Board felt that these two methods of extending credit should be brought into harmony. The Board, therefore, in April 1923, appointed a committee of officers of Reserve Banks to act in conjunction with the Board in effecting a more complete coordination of all open market operations of the Reserve Banks, both on their own account and in the execution of orders in Government securities for the Treasury as fiscal agents of the Government.

At the time the committee was appointed, the Federal Reserve Board adopted the principle:

"That the time, manner, character, and volume of open market investments purchased by the Federal Reserve Banks be governed with primary regard to the accommodation of commerce and business and to the effect of such purchases or sales on the general credit situation."

As the Act provides that discount rates shall be fixed "with a view of accommodating commerce and business," the adoption of this principle definitely established open market policies on the same basis as discount policies. Open market operations provide a cushion of credit between the direct borrowings of member banks and the money market, and have facillitated the flow of credit into and out of the Reserve Banks, in such a way as to exercise a steadying influence in the market and to reduce the tendency toward periodical tightness of money formerly felt by business in the spring and by agriculture in the autumn. Indeed, open market operations, particularly sales of securities, have proved to be a valuable adjunct to discount policy. The minor influence which sales of securities by Reserve Banks exert may, at times, avoid the necessity for resorting to the major influence of a change in discount rates.

While it is not entirely clear from a reading of the above what the open-market policies of the System are, it would appear that they are so

9) Permitting the continued misuse of the acceptance.
10) The lack of a definite policy toward the gold accretions.

While it is the proper thing to remind critics of the famous maxim, *La critique est facile mais l'art est difficile*, and that foresight is much more difficult than hindsight, criticism which aims to be constructive in its nature and offered in a purely unimpassioned manner has its merits. The Reserve System will in future years come face to face with problems similar to those it has confronted in the past. A willingness to profit from the errors of the past may enable her administrators to avoid stumbling into the same pitfalls.

framed as to keep the earning assets of the Reserve Banks at a fairly constant figure. In other words if discounts increase, the Regional Banks would presumably purchase proportionately less in the open market. In these pages the author has endeavored to indicate that the open-market policies adopted by the System should be such as to mitigate fluctuations in the price cycle, *i. e.*, if prices are rising, open-market purchases should be greatly curtailed if not stopped entirely. Purchases in the open-market then should fluctuate inversely to fluctuations in prices and not necessarily inversely to fluctuations in discounts.

CHAPTER IX

RETROSPECT AND PROSPECT

RETROSPECT

Perhaps no other central reserve holding bank has passed through such a variety of experiences in its early years as has the Federal Reserve System. It will be remembered that before the several Banks were formally opened to the public the newly constituted Board was faced with a suspension of international trade, with a crisis accompanied by a breakdown of the foreign exchanges and a demoralization of the cotton markets, and with an emergency which required the issuance of several hundreds of millions of dollars of Aldrich-Vreeland currency. After that flurry had passed the System had a comparatively peaceful existence for two years. The entrance of America into the war once again forced it into the limelight in the very important rôle of fiscal agent to the Government. Nor did the Armistice bring a cessation to its activities, for war costs did not decline but continued to mount for another year. When the government's financial needs began to subside, America was plunged headlong into one of the most serious depressions ever experienced if its severity be measured by the decline in the production of basic commodities. The System, which during the war had been regarded as the financial savior of the country, was attacked in export houses, among farmers, in factories and in Congress as the cause of this depression. Enemies rose on every hand, threatening its very structure. From the second half of 1921 the improvement has been fairly steady in industrial and commercial fields so that, aside from the criticisms of ardent agriculturalists, the past year and a half has been rather a calm one for the Reserve Banks. This, therefore, is a peculiarly opportune time to evaluate the policies of the System.

A Discount Policy Has Not Been Developed. Harsh though the verdict may seem, at no time during these years may the System be said to have had a discount policy. For this, however, we must not hold the Reserve Banks entirely responsible. The Treasury Department, in forcing them to conform to its notions

of war finance, is blameworthy to a very considerable extent. We must also remember that the System is young and that its officials are not steeped in the traditions of central banking as are those of the central banks in Europe. Though all this be true the officials of the System are to blame in so far as they failed to profit by European experience, and in so far as they did not develop a discount policy when they were masters of their own operations. Not only has the System developed no discount policy, but in matters of theory, such as the relationship between money and credit on the one hand and prices on the other, and as regards the efficacy of the Bank rate, the Reserve Board has been most inconsistent and opportunistic.[1] It has frequently reversed its stand, not because the course of events demonstrated any error in its original position, but because of changes occurring in popular sentiment.

It is of paramount importance that the System take its bearings and decide what course it must follow. A decision must be reached regarding the relationship between the Bank rates and the market. Before America entered the war the Bank rates ruled above the market; since then they have been below. The consensus of opinion among students of the subject here and abroad is that the Bank rate should rule higher than the market on each of the several types of paper discounted by the System. The regulations and decisions of the Board regarding the eligibility of paper should be thoroughly canvassed in an effort to determine whether any laxity has crept in which would promote inflation. Further, the Regional Banks should through conferences adopt a uniform open-market policy, deciding among themselves when they will extend and when curtail their open-market operations. Means should be taken to prevent the abuse of the acceptance and to promote a healthy discount market. A decision should be reached immediately regarding the attitude to be taken towards the present enormous gold reserves and towards future gold accretions. Should expansion be permitted upon these or should the Reserve Banks regard themselves as trustees of this gold and refuse to allow it to be used as the basis for credit inflation? The development of discount policies presupposes that they adopt a consistent attitude toward inter-district borrowing, deciding when and under what conditions it is to be allowed. Then also they must decide whether Bank rates are to vary from district

[1] In all fairness it might be stated that the inconsistencies in the Board's position may be due in part to frequent changes in personnel.

to district or to be uniform, as they are at the present time, over the country. The question whether Bank rates should be uniform within a single district on all eligible paper or should vary with the type and maturity of paper is one which pressingly demands attention. The Reserve Banks should face all these problems in a courageous manner and should attempt their solution in a scientific spirit, uninfluenced by political considerations.

Suggestions Offered to Improve the System. It is mainly because the System has not developed a discount policy that various suggestions have been offered by students of the subject which would assist the Regional Banks in controlling credit. Some of these are in the form of amendments to the Act, others as practices to be recommended to the System. Many have for their purpose the substitution of mechanical for human control in the discount policies of the Reserve Banks. This it will be remembered was the goal of the Peel Act. It was thought by its sponsors that through the passage of that Act expansion of credit could be prevented by arbitrary limits placed on note issues, irrespective of the loan policy of the Bank of England. As demonstrated in a spectacular fashion in the crisis of 1847 this was found to be impossible. Although it is true that the human equation can not be eliminated in central banking, it is desirable nevertheless that certain changes be made in the Reserve Act, changes which would reduce the potentialities of inflation and which would strengthen the hands of the officials of the System in their efforts to control credit and prices. Certain of the suggestions which follow were offered in previous chapters. The remainder have had their origins elsewhere.

1) *Reserves of Member Banks.* It would greatly simplify reserve requirements in America if all member banks were required to hold a reserve of 10% against demand deposits and 3% against time. In order to lessen the inflationary potentialities of the present provisions of the Act, one-half of this reserve should be held as a deposit account with the Reserve Banks and one-half should be held in the form of gold or gold certificates in the vaults of the member banks. In case it were not deemed expedient to adopt this plan of requiring the same reserve of all member banks and in case it were thought advisable to retain the present classification of central reserve cities, reserve cities, and country towns; then the Board should make a careful reclassification of all towns in America.

There are many places which are listed as country towns, such as Newark, N. J., New Haven, Conn., Scranton, Pa., which obviously should be promoted to the reserve city classification. Either the same reserve (10%) should be required of all member banks or the towns of the United States should be rated with some regard to their economic importance. The former perhaps would be the better course to follow, for the distinctions between central reserve, reserve cities and country towns are no longer so clearly marked as before the passage of the Reserve Act.

2) *Acceptances.* The provisions in the Act permitting member banks to accept domestic bills of exchange should be repealed.[2] The abuses which have crept into the use of domestic acceptances and the fact that there is little need for them necessitate this.

3) *Commercial Paper.* The Act should be amended to permit the Reserve Banks to purchase promissory notes. To give them such permission would greatly enhance their power in the open market, as well as their ability to control credit fluctuations.

4) *Progressive Rates of Discount.* During a time when credit is expanding rapidly and prices are rising, the reenactment of the Phelan Act would give the Reserve Banks a peculiarly effective weapon in combating inflationary tendencies. It would simplify the administration of the Act if there were but three gradations, the basic rate, with the other rates ruling perhaps 2% and 4% above this. In some districts a fourth gradation, 6% above the basic rate, might be required to check credit expansion.

5) *Forbidding the Issuance of Reserve Notes Against Paper Secured by Government Obligations.* The enactment of such a provision would of course allow the issuance of Reserve notes only against commercial paper, acceptances and gold. During the war and the post-war period Reserve notes to a considerable extent were secured by paper collateralled by government obligations. The ability to issue Reserve notes in this manner promoted the inflation which occurred and made them less responsive to business needs.

6) *Reserves.* It has been suggested by several writers that the Regional Banks be required to maintain the same reserve (in gold and gold certificates) against both their note and deposit liabilities, and that this reserve should amount to 50%. This suggestion has been offered because of the dangerous tendency in American banking for the minimum reserves to become the actual reserves,

[2] This is discussed in greater detail in earlier Chapters.

Since the reserves of the Regional Banks are now greatly in excess of this amount, this would be an opportune time to adopt the change. This requirement would not be excessive, for before the war central banks in Europe ordinarily kept a reserve against their liabilities much greater than 50 per cent.

7) *Penalties.* The Act should be changed so that the penalties imposed against deficiencies in reserves against Reserve notes would be the same as those levied against deficiencies in reserves against deposits. Furthermore the penalties imposed on the smaller deficiencies should be increased. At the present time they are woefully inadequate.[3]

8) *The Board.* Mr. Paul Warburg has made the suggestion that the Governor and vice-Governor of the Federal Reserve Board be elected by its members, that the Governor be the Chairman, that an additional member be added to assume the duties of the Comptroller of the Currency and that the Assistant Secretary of the Treasury rather than the Secretary be the ex-officio member. The last suggestion was offered because of the inability of the Secretary of the Treasury, with his multitudinous duties, to attend properly to the business of the Board. The first two of these suggestions, are timely and should be adopted.[4]

9) *Loans.* John Skelton Williams, a former Comptroller of the Currency, has made the suggestion that the Reserve Banks be permitted to loan on notes secured by bonds and stocks other than those issued by the Government. With this we can not agree, for the inflationary possibilities of the change would be too great and the ease with which the funds of the System could be diverted to stock exchange speculation would be greatly increased.[5]

10) *Rediscounts of Members.* When Mr. Crissinger was Comptroller of the Currency he made the suggestion that member banks be limited in their rediscounting with the Reserve Banks to some ratio of their own capital and surplus.[6] He felt that this would be an insurance against undue inflation on the part of the banking community. While it is desirable that banks should keep their rediscount operations as low as possible and should repay their

[3] For recommendations of Federal Advisory Council on this point, see, *Eighth Annual Report of the Federal Reserve Board,* p. 689.

[4] *Political Pressure and the Future of the Federal Reserve System,* pp. 71–72.

[5] *Hearing before the Joint Commission of Agricultural Inquiry,* Part 13, p. 64.

[6] *Annual Report of the Comptroller of the Currency,* 1921, p. 3.

borrowings promptly, the chief danger inherent in any such plan as the above is its mechanistic features which are apt to impair the efficient operation of the banking system under certain conditions as for instance during a crisis.

11) *The Reserve.* Mr. A. C. Miller, a member of the Board, has offered a plan which he feels would make the reserve ratio a better guide to credit policy. He would reapportion the existing gold holdings between the note and deposit reserve. Against the deposits as of the date when the system is inaugurated a reserve of 45% would be allocated, while the remainder of the gold reserve would be set aside as the reserve against Federal Reserve notes. The reserve allocated to the deposit liability would become the working reserve of the System. Fresh accretions of gold would be transferred to the note reserve and withdrawals of gold would be taken from the note reserve and commercial paper substituted. The deposit reserve would be fairly constant in amount while the note reserve would fluctuate with international gold flows. While the deposit reserve would be fairly constant in amount its proportion to deposits would constantly fluctuate, since any expansion in the loan account of the Reserve Banks would be reflected in a lower reserve percentage. This, according to Dr. Miller, would give the deposit reserve a new meaning.[7] His plan of course closely resembles the administration of the Bank of England. To possess force Dr. Miller's suggestion[8] would have to be incorporated in the Reserve Act. By making the reserve against deposits sensitive the plan possesses some value in that the Reserve Banks would be forced to raise their rates of discount should a slight expansion occur. The amount of gold allotted to deposits would of course have to be altered from time to time in order to provide for the secular growth in the deposit currency of the nation. In inserting the new item "Gold held exclusively against Federal Reserve notes" in its weekly press statement showing the condition of the Reserve Banks, the Board has to a certain extent adopted Mr. Miller's suggestion. If the gold imports continue to flow to the United States in large amounts, the time may come when it would be wise for the Government by the enactment of a statute to forbid the further influx of gold. During the Great War Sweden enacted

[7] *Federal Reserve Policy,* pp. 204–205.

[8] His suggestions are somewhat similar to those made by Bullock, Sprague and Donham (*Federal Reserve Bank Policy; The Need of a Definite Statement*) that the Reserve Banks should treat the present reserve of 75% as if it were really a reserve of 50% by reason of the possibility of a redistribution of the world's gold supply.

such an act, passed on the 8th of February, 1916. At the present time gold is the cheapest means the European nations have of liquidating their indebtednesses to the United States by reason of our high duties on commodity imports. It would have been much better for the American people through 1923 had commodities instead of gold to the value of two hundred and ninety four millions of dollars been received.

12) *Stabilization of Prices.* Mr. Carl Snyder, of the Federal Reserve Bank of New York, has suggested changes in the Reserve Act and American currency laws, which he feels would automatically prevent inflation and yet be free from all political interference. Briefly summarized his suggestions are as follows:

a) Make all paper currency legal tender and the sole money for bank reserves.

b) Put all the gold now in the Treasury and in the Federal Reserve Banks in a common redemption fund which would be used to redeem the paper money of the country and to meet export demands. The provisions in the Reserve Act regarding the gold reserves against Reserve notes and deposits would be repealed.

c) The paper money in circulation would be controlled by an index number of prices checked by indices of employment and production.

d) The Reserve Banks would be forced to alter their Bank rate and security holdings by definite amounts for changes of a certain percentage in the price level.

e) In case gold exports should take place or currency should be presented for redemption the Reserve Banks would be required to increase their holdings of securities by a corresponding amount.[9]

The first three suggestions when worked out in detail would involve quite far-reaching changes in the structure of the American monetary system and it is open to doubt whether such changes are desirable. It is eminently sound, however, that the Reserve Banks should adjust their Bank rates and open-market operations to changes in the price level.

13) *The Discount Market.* Mr. Paul Warburg has offered other suggestions which have to do chiefly with the development of a discount market:

a) The larger member banks should adopt the policy of investing a fair proportion of the funds which have been released

[9] *The Stabilization of Gold: A Plan,* pp. 283–284.

through the lower reserves required under the Reserve Act, in bankers' and trade acceptances and in loans on such paper to bill brokers. The more powerful of these banks should adopt the policy of not rediscounting with the System, while the others should discount normally only their short maturities.

b) The smaller member banks should use their rediscount facilities unhesitatingly provided that their borrowings should not exceed a reasonable limit as indicated by a safe proportion of their resources, provided that they do not borrow the year round and provided that their seasonal borrowings are liquidated at least once a year.

c) To increase the use of the acceptance there should be a countrywide net of modern warehouses, in which agricultural products could be properly graded and kept.[10]

Aside from the fact that his suggestions involve a wider use of the domestic acceptance than is desirable in view of the misuse to which it is subject, this plan also presupposes a stronger and better developed discount market than exists at the present time.

14) *Membership.* It has been argued by many that the Reserve Banks can not exercise credit control until a larger proportion of the banks of the country become members. Mr. John H. Rich, Federal Reserve Agent of the Federal Reserve Bank of Minneapolis, has said:

> With two-thirds of the membership and more than one-third of the resources of the banks of the country outside of the system, it is obviously impossible to expect it to exercise any complete control over expansion and contraction of credit.[11]

The suggestion is made by advocates of this point of view that a strenuous campaign be waged to induce the eligible non-member banks to join the System. It is not necessary however that all banks belong to the System in order that it may exercise credit control nor is it desirable. To the extent that the discount policies of the System influence the larger city banks which habitually loan to smaller banks throughout the country (many of which are non-members) the credit policies of the non-member institutions will certainly be affected. To the extent that the discount policies of the Reserve Banks slow up the increase of Reserve notes the growth in the credit extensions of member and non-member institutions will be influenced, assuming as we have that there is a more or less constant ratio between the amount of money in circulation and

[10] *New York Evening Post,* January 20, 1923, p. 6.
[11] *Expansion and Contraction from the Federal Reserve Standpoint,* p. 175.

bank deposits. Furthermore it is desirable that only those banks mainly engaged in commercial banking be members of the Reserve System; otherwise the assets of the Reserve Banks would partake of investment characteristics.

While many of these suggestions are highly desirable and would facilitate the control of credit by the Reserve System others would go so far as to render the provisions of the Reserve Act inelastic and incapable of being adjusted to whatever exigencies might arise.

PROSPECT

Since we do not consider desirable, even if possible, the control of the Reserve Banks by rigid, mechanistic regulations, what factors should guide the officials in the adoption of discount and credit policies? Under what circumstances and for what reasons should the Bank rate be raised and what other methods aside from the Bank rate might the officials use to modify fluctuations in price cycles? To these topics we shall now devote our attention.

Factors determining Changes in the Bank Rate. In Chapter II there was discussed at some length the theory of the Bank rate in England, Germany and France; the purposes to be attained in raising and lowering the official rates of discount and the conditions under which increases in the Bank rate might be expected to be effective. Before the war we found the officials of those institutions had quite clear notions of the factors which should lead to changes in the Bank rate. The economic consequences of the war, such as the suspension of gold payments, restrictions placed on international trade, and forced borrowings from central banks by Governments, have beclouded the ideas of many central bankers as regards the functions and purpose of the Bank rate and the reasons which should lead to alterations. Therefore, because of the new situations which have arisen we must discuss again the factors which should be considered in the raising and lowering of Bank rates with particular reference to American conditions.

In recent discussions among officials of the Reserve System, bankers and economists, concerning this question, particular emphasis has been laid on the following factors:

The size of the reserves
The foreign exchanges

Prices
The volume of bank loans and deposits
Interest rates
Business and industrial activity
Economic and political conditions elsewhere

The Reserve Percentage as a Determinant of the Bank Rate. The reserves of central banks are affected, either relatively or absolutely, by seasonal, foreign and cyclic drains. At the time of seasonal needs for money and credit the liabilities of central banks increase and their reserve percentage falls. By reason of exports of gold to purchase foodstuffs and raw materials the reserves of central banks may decline absolutely at certain seasons of the year. Other reasons accounting for foreign drains are, higher interest rates in foreign countries, foreign wars, financial crises abroad, currency reforms, etc. Cyclic drains occur at the time of a crisis when the increase in the liabilities of central banks is accompanied by an actual withdrawal of gold.

The state of the reserves was perhaps the chief reason for changing the Bank rate in England before the war and was an important reason in Germany. In the hearings conducted abroad by the National Monetary Commission, the officials of the Bank of England testified that the Bank rate was raised with the object either of preventing gold from leaving the country or of attracting gold to the country.[12] Giffen, likewise, after a lengthy statistical analysis stated that there was a high inverse correlation between the Bank rate and the reserves.[13] He dealt extensively with prices but felt that the connection between prices and the Bank rate was not nearly so evident as the connection between the Bank rate and the state of the reserves. MacLeod [14] and Goschen [15] also place great emphasis on the state of the reserves and of the foreign exchanges in forcing changes in the rate of discount. Palgrave [16] came to the same conclusions:

> A study of this analysis [the relation of the reserve to the current rate of interest] shows the truth of the usual conclusion, that the rate of discount charged by the Bank of England is regulated more by the proportion of the reserve to liabilities than by

[12] *Interviews*, etc., p. 26.
[13] *Essays in Finance*, p. 72.
[14] *The Theory and Practice of Banking*, Vol. II, p. 346.
[15] *Essays and Addresses on Economic Questions.*
[16] *Bank Rate and the Money Market*, pp. 218–219.

any other consideration. That the amount of the bankers' balances, and the proportion they bear to the reserve, may have a bearing on the rate is very probable, though the influence of this is not clearly marked, and cannot now be traced owing to the absence of information in the published returns. The movements of the foreign exchanges, quoted for the great European centers of business—Paris, Amsterdam, Hamburg, Frankfort, and, we must now add, Berlin, as representative of Germany—influence the Bank rate very greatly, because an unfavourable exchange is accompanied by an outflow of bullion, and hence by an immediate diminution of the reserve. It is well known that the Directors of the Bank, when fixing the rate to be charged, take the state of the foreign exchanges into consideration. The Bank possesses still, though other powerful banking institutions have grown up round it, and appear at first sight to overpower it, so strong an influence over our money market that by setting the rate of discount high enough it can always control the foreign exchanges, although this effect is not now produced so rapidly as in former years; hence the foreign exchanges generally appear to follow, rather than to lead, the Bank of England rate of discount.

The emphasis placed upon the reserve percentage as the determinant of the Bank rate in England is not surprising in view of the inelasticity of her currency system, which made her reserve a peculiarly sensitive indicator of all credit changes.

Older British writers have been criticised for their lack of emphasis upon prices and for their failure to emphasize the possibility of price stabilization through changes in the Bank rate. This is a pardonable oversight in that the sensitiveness of the Bank's gold reserves indicated whether prices there had diverged from prices in other gold standard nations and gave warning of a need for changes in the Bank rate. While ostensibly fluctuations in the Bank rate were determined by changes in the reserve percentage, in the last analysis the movement of world prices was the controlling factor.

In Germany, according to statistics compiled by the Reichsbank, fluctuations in the percentage of reserves were a more important factor prior to 1896 for bringing about changes in the Bank rate than they have been since. Since that time fluctuations in the reserves have played a less important rôle by reason of the increased gold production throughout the world.[17] Germany of course has employed other methods for preventing foreign

[17] Lotz, p. 505.

drains, such as the use of "moral" pressure, the granting of interest-free advances on gold imports and the building up of a port folio of foreign bills. In France the Bank rate has not been as responsive to changes in the percentage of reserves as in England or in Germany. The Bank of France has protected her gold stock largely through the employment of the passive gold premium policy and has maintained a very stable rate of discount.

Should the reserve percentage of the Regional Banks be an important factor in determining the Bank rate in America during the next decade; should a high reserve be accompanied by a low Bank rate and vice versa? Up to the present time the Bank rate and the reserve percentage have in general moved in opposite directions, though the Bank rate was raised at the New York Federal Reserve Bank on February 23, 1923, in spite of a huge reserve. The officials of the Reserve System have placed some emphasis on the reserve as a determinant of rate changes. At a Governors' conference held in Washington in October of 1920, Governor Seay said that the conservation of reserves was the primary object of credit control.[18] Governor Strong in testifying before the Joint Commission of Agricultural Inquiry did not place the same emphasis upon the state of the reserves as did Governor Seay but declared that it was one of the considerations for changing the rate of discount.[19] Governor Harding affirmed that the state of the reserves had only an indirect bearing and that there had not been any consistent relationship.[20] The state of the reserves has been emphasized in a negative way by the officials of the System in that they have openly suggested, aside from market rates of interest, no other factors which might determine changes in Bank rates.

The reserve ratio is not a good guide for the credit policies of the Reserve Banks at the present time for the following reasons:

1) As a result of the amendments of June 21, 1917, practically the entire gold stock of the country is concentrated in the vaults of the Reserve Banks. An expansion of loans and discounts at home will not now lead to a drain of gold from the System, as it would have previously.

[18] *Hearing before the Joint Commission of Agricultural Inquiry*, Part 13, p. 734.

[19] *Ibid.*, p. 582.

[20] *Hearing before the Joint Commission of Agricultural Inquiry*, p. 415. On the other hand, Governor Harding in *Trust Companies* (XXXIII, November, 1921, pp. 509–513) stated that the reserve of the individual Reserve banks should be a determining factor in fixing the Bank rate.

2) The present gold stock of the country which is mainly concentrated in the vaults of the Regional Banks is abnormally large. America is the guardian of a large part of the world's supply of gold and must be in a position of readiness to meet all demands made on it. The stock of gold in America since 1914 has increased by over two billions. Surely at some time there will be a redistribution of the world's monetary stock of gold. The reserve ratio at the Regional Banks should be maintained far enough above the legal minimum to meet the foreign withdrawals whenever they may occur. The excess gold reserves of the System which amount at the present time to approximately 1658 millions of dollars are of course ample to take care of all foreign drains. These high excess reserves should not lead officials of the System to lower rates of discount and permit expansion on their basis because of the constant possibility of the foreign demand. It is extremely hazardous to predict when Europe will begin to draw gold from America. The answer will depend upon:

a) The rapidity of the economic rehabilitation of Europe, and particularly of France, Italy, Russia and of the nations formerly included in the Central Powers. Their recovery will be delayed by wars, revolutions, etc., and will be hastened by a peaceful solution of Europe's pressing political questions.

b) The attitude of the great powers towards the cancellation of the international indebtednesses. In view of the huge indebtedness of the European nations, it is extremely unlikely that America's balance of payments with Europe will in the near future become so adverse as to prompt an efflux of gold unless there is a tremendous upward movement in prices in the United States.

3) The size of the present reserve percentage of the Regional Banks is not a good guide to credit policies by virtue of the fact that America's gold is being used to secure the notes issued by central banks in other countries. By reason of this our gold reserves should be maintained at a high figure.

The Federal Reserve Bank of Chicago in its monthly bulletin for April 1, 1923,[21] explained that the inability of Europe to draw gold from America rendered the reserve ratio more or less valueless as a credit indicator. Professor Sprague writing in the *New York Evening Post* [22] has stated this in no uncertain terms:

[21] Quoted in *New York Times,* April 9, 1923, p. 24.

[22] Issue of April 5, 1923, p. 8. Messrs. Hepburn and Anderson have stated the case similarly: "But the reserve ratio as such is not, and should

Amendments to the Federal Reserve act, in conjunction with disorganized monetary and general economic conditions throughout the world, have made the reserve ratio of the reserve banks not merely valueless but a positively dangerous guide in the determination of discount policies. Since June, 1917, required reserves of member banks have consisted entirely of balances with reserve banks, and consequently credit expansion by member banks no longer leads to any withdrawals of gold from the reserve banks. For this reason, and because other countries are in no position to draw appreciable amounts of gold from the United States, the gold holdings of the reserve banks are in no danger of being heavily drawn upon as a result of very considerable credit expansion and a decided advance in the general price level.

The defectiveness of the reserve ratio, owing to its lack of sensitiveness to changes in the volume of credit, is further seriously enhanced by reason of the extraordinary amount of the present reserve above statutory requirements. On the basis of these reserves, which are now in the neighborhood of 75% of liabilities for notes and deposits, the Federal Reserve banks could extend over three billions of additional credit to member banks, and upon the basis of this accommodation, after it had become generally diffused, credit to several times that amount could be granted by member and non-member banks. Even in the present disorganized state of world finances, such inordinate inflation would be checked by gold exports before it had fully run its course, but this restraining influence would certainly not become potent until long after credit had been inflated and prices advanced to a point that would have created a most unsound and unstable business situation.

In present circumstances, then, the management of the reserve banks cannot make use of the reserve ratio as a guide in the determination of discount rates.

At the present time the reserve ratio of the Federal Reserve Banks can not be relied upon to serve as a guide for discount rate policy. We must look elsewhere for dependable determinants of the Bank rate.

The Foreign Exchanges. The foreign exchanges as determinants of the Bank rate were of considerable importance in

not be, the controlling factor. This is particularly true in the United States at the present time because the reserve ratio is abnormally high, as a consequence both of the extraordinary inflow of foreign gold, and of the war-time policy of the Federal Reserve Bank of drawing into their reserves the great bulk of the gold and gold certificates which had been in general circulation." *The Gold and Rediscount Policy of the Federal Reserve Banks*, p. 17.

England and Germany before the Great War. They were not given the same weight in France for there a stable rate of discount with fluctuating foreign exchanges was considered preferable to a fluctuating rate of discount with stable foreign exchanges. It is not likely that the foreign exchanges will prove an important factor in discount rate changes in the United States during the next decade. The currency difficulties prevailing in the majority of European nations coupled with the amount of their indebtedness to America make it seem unlikely that the dollar will depreciate to any considerable extent unless prices should rise to very high levels. Further, the permission granted the United States in the Debt Funding Agreement, signed with Great Britain, to sell bonds of the British Government in America, England or indeed in any country of the world furnishes the United States with a very powerful weapon for use in exchange stabilization.[23] The foreign exchanges should be watched by the Reserve Bank officials not because of their own importance but because they may be reflective of inflationary tendencies in the United States. When the time arrives that the foreign exchanges once again assume their importance in the determination of changes in the Bank rate in the United States, it would be desirable for the Reserve Banks to build up a portfolio of the finest bills drawn in foreign currencies, as indeed they are permitted to do by law, to use in helping prevent the depreciation of the dollar.

Commodity Prices. During the next decade officials of the Reserve Banks must rely upon movements in general wholesale commodity prices as the best guide for discount rate changes. Knowingly or unknowingly central banks have always had to take cognizance of changes in the price level. Were the foreign exchanges depreciated, it was probably due to a rise in the prices of securities or commodities. Were the reserve percentage of central banks low, this in all probability resulted from expanding note and deposit liabilities which had induced a rise in prices. At all times the central banker, whether he has been willing to admit it or not, has had to adjust his credit policies to price movements.

Not only have central bankers in the past raised or lowered their rates of discount, knowingly or unknowingly, with reference to fluctuations in the general price level, but they should

[23] *Monthly Review,* London Joint City and Midland Bank, July–August, 1923, pp. 4–5.

avowedly do so. Theirs should be the task, in so far as they are capable, of maintaining stability in the general price level, the desirability of which no one in this day of enlightenment on the subject of economics would dare deny. Adjusting his policies in accordance with the movement of the general price level does not mean that the central banker is endeavoring to control the rise or fall of the prices of individual commodities. He is not concerned with individual prices but with general prices. Nor must it be inferred that the central banker is omnipotent and can absolutely control all movements in general prices no matter what their origin. He can not control, if his nation be on a gold basis, increases in prices due to an increase in the production of gold, or those resulting from credit expansions on the part of the general banker based on resources heretofore unemployed. Given freedom of action he can control a price movement which is based on rediscounts such as that which occurred in America through 1919 and 1920, for then the Bank rate will be effective, and he can exercise some influence over others by issuing warnings and opinions to the business community.

However inconsistent the statements of the officials of the Reserve Banks may be on other topics, on this they are agreed, if we may judge from their official pronouncements, that in fixing their Bank rates they take no cognizance of the price level. Thus Governor Harding in testifying before the Joint Commission of Agricultural Inquiry [24] said that it was not the function of the Reserve System to regulate prices either up or down. Governor Strong before the same Commission reiterated this statement that prices are of no concern to the Reserve System. "In other words, I do not think that the discount policies of the reserve bank should be determined by watching a chart or an index of the price level . . . the rate of the reserve bank and its relation to prices is a reflection of conditions rather than an effort to create conditions." [25] Later on Governor Strong asserted that were the Reserve System managed solely with reference to prices it would be to convert the System "into an instrument for the treatment of special interests." [26] Of course here he confused the question of the general price level with the problem of individual prices. At another point Governor Strong main-

[24] *Hearing before the Joint Commission of Agricultural Inquiry,* Part 13, p. 334.
[25] *Ibid.,* p. 622.
[26] *Ibid.,* p. 781.

tained that the Reserve Banks were concerned primarily with the control of credit.[27] By controlling credit expansions and contractions will not central banks automatically control prices? The chief reason we are interested in changes in the amount of money and credit is because of their effect on prices. This point of view (that in the determination of their policies they were not concerned with prices) seems to be held generally among the officials of the Reserve Banks [28] and is the only topic on which any degree of unanimity of opinion exists.[29] So influenced was he by the statements of the officials of the Reserve Banks who appeared before the Joint Commission of Agricultural Inquiry that in a minority opinion Representative Mills declared that the view that the Reserve Banks may control prices is "so contrary to economic facts and to the purposes of the Federal reserve system, that any expression of opinion which seems to support it, even indirectly, should not be permitted to pass unchallenged." [30] Whatever may be the opinions of the officials of the System on this subject their policies through 1920, as we have seen, did influence the course of prices in America.

More and more are economists and also practical bankers, excluding the reserve bankers in America, coming to the opinion that central banks should do all in their power to promote stability in the price level, to control cyclic movements in prices. One of the first to espouse this point of view was Dr. Knut Wicksell in a very acute work entitled *Geldzins und Güterpreise.* Alfred Marshall not only states that a central bank should do this but feels that its task is an easier one if the nation in question be on an inconvertible paper standard.[31] R. G. Hawtrey,[32] W. C. Mitchell,[33] John Maynard Keynes,[34] and Gustav Cassel [35] in various articles stress the importance of adjusting discount rates to variations in the price level. The Cunliffe Committee, composed of some of the ablest bankers and economists of the

[27] *Hearing before the Joint Commission of Agricultural Inquiry,* Part 13, p. 714.

[28] *Ibid.,* pp. 734–735.

[29] See, also, Harding, *The Federal Reserve System as Related to American Business,* p. 9; *Reviving the Activities of the War Finance Corporation,* Part I, p. 52; Leffingwell, *Discussion of Professor Sprague's paper,* etc., p. 35.

[30] *Report of the Joint Commission of Agricultural Inquiry, Credit,* p. 159.

[31] *Money, Credit and Commerce,* pp. 258–259.

[32] *Monetary Reconstruction,* Introduction and Chapter I.

[33] *Prices and Reconstruction.*

[34] See editorial page The *New York Times,* August 24, 1923.

[35] *Money and Foreign Exchange after 1914,* pp. 101–103.

British Empire, stated as a matter of course that the discount policy of the Bank of England was able, and should be fashioned so as to control price movements.[36]

> Under an effective gold standard all export demands for gold must be freely met. A further essential condition of the restoration and maintenance of such a standard is therefore that some machinery shall exist to check foreign drains when they threaten to deplete the gold reserves. The recognized machinery for this purpose is the Bank of England discount rate. Whenever before the war the Bank's reserves were being depleted, the rate of discount was raised. This, as we have already explained, by reacting upon the rates for money generally, acted as a check which operated in two ways. On the one hand, raised money rates tended directly to attract gold to this country or to keep here gold that might have left. On the other hand, by lessening the demands for loans for business purposes, they tended to check expenditure and so to lower prices in this country, with the result that imports were discouraged and exports encouraged, and the exchanges thereby turned in our favour. Unless this two-fold check is kept in working order the whole currency system will be imperilled. To maintain the connection between a gold drain and a rise in the rate of discount is essential to the safety of the reserves. When the exchanges are adverse and gold is being drawn away, it is essential that the rate of discount in this country should be raised relatively to the rates ruling in other countries. Whether this will actually be necessary immediately after the war depends on whether prices in this country are then substantially higher than gold prices throughout the world. It seems probable that at the present they are on the whole higher, but if credit expansion elsewhere continues to be rapid, it is possible that this may eventually not be so.

Professor Sprague has asserted that price movements should be a factor of first importance in regulating the discount policies of the Reserve System:[37]

> A prolonged upward movement of prices with all its disastrous consequences is hardly possible without large use of the credit resources of the Reserve Banks. It would seem, therefore, that the effect of advancing prices on the general business situation should

[36] *First Interim Report,* etc., p. 6.
[37] *The Efficiency of Credit,* pp. 220–221.

be a factor of the first importance in shaping the discount policy of the Reserve Banks, assuming more and more importance as a period of business activity continues. The management of the Reserve Banks is, however, by no means inclined to this view of the matter. Responsible officers of the banks and also members of the Federal Reserve Board roundly assert that they are not concerned with the course of prices and that in the determination of discount policies the price situation is not a definite factor.

Dr. W. F. Gephart of the First National Bank in St. Louis asserts that central banks would make a distinct contribution if they would endeavor to mitigate fluctuations in prices:[38]

There is a growing feeling on the part of students of banking that by means of a judicious control of credit resources, through the medium of the discount rate at the central bank, it is possible to influence effectively prices against unsound inflationary tendencies. At first thought this may appear rather far-fetched, but when we take into consideration the fact that hard money, and even paper money, is but a small portion of the actual volume of purchasing power in existence, we can appreciate the importance of credit control. After all the great bulk of purchasing power in most highly developed industrial countries is created through the extension of credit and this is largely dependent upon bank reserves for its soundness. The limits of credit extension must be under the control of the central bank if it is really to be the custodian of the ultimate banking reserves of the country. The central bank can make a distinct contribution by preventing, through fluctuations in the discount rate, the volume of credit from exceeding sound proportions. While it is not pretended, and no serious student of this problem has maintained, either that a banking policy or a particular method of controlling credit reserves is a panacea for industrial difficulties, or violent price fluctuations, it is nevertheless true that both unsound industrial conditions and violent fluctuations are invariably accompanied by over-extension of credit. The numerous efforts that have been made in recent years to expand and exploit the credit resources of the country are well known. Too many people in their desire to improve conditions have confused the exploitation of credit resources with real wealth creation.

[38] *Inflation in Relation to the Bank Reserve and the Business Cycle*, pp. 13–14.

Professor Fisher feels that his plan for the stabilization of prices (the compensated gold dollar) would work the more effectively if an understanding were reached with the Reserve Board that it was to adjust its discount policies to price movements.[39] Prof. W. I. King has also voiced the same opinion.[40] In view of the great amount of discussion [41] on this topic and the unanimity among disinterested experts and bankers that it is the function of central banks to control prices, the statements of the officials of the System seem archaic and hark back to the days before the *Bullion Report*.

The Regional Banks must depend upon price fluctuations as the most reliable determinant of rate changes. No additional legislative authorization is needed to enable them to adjust their rates of discount in accord with price fluctuations, though to empower them to do so might furnish them with the necessary courage to fashion their policies in accord with these principles.[42]

Volume of Bank Loans and Deposits. If the increase in loans and deposits of commercial banks has led to no increase in prices but has faciliated the production and marketing of commodities the Bank rate need not be raised. If, however, the increase in bank loans has proceeded beyond the point at which it will facilitate the productive and distributive process and where additional units of credit will simply be utilized for the purpose of hoarding goods and of bidding up the prices of commodities, it is essential that the Bank rate be raised. Whether increases in credit have had such results may be tested by reference to price fluctuations, to the available statistics of goods held in storage, to trade indices, to the movement of commodities and to speculative movements in general.

Interest Rates. Since 1850 it has been one of the cardinal principles in the discount policy of the Bank of England to maintain its rate above the market and to anticipate in so far as possible advances in market rates. Experience had taught the Bank that not to do so prompted speculation and inflation and intensified the severity of crises. Particularly was this illustrated in the crises of 1825, 1839 and 1847. So fixed a policy has this

[39] *Stabilization of Purchasing Power of Money.* Hearings before the Committee on Banking and Currency of the House of Representatives, etc., p. 47.

[40] *Ibid.*, p. 65.

[41] See, also, letter from Irving Fisher to editor of The *New York Times*, September 2, 1923, and monthly review of National City Bank, June 1922, p. 9.

[42] Such a bill has been introduced by Representative Goldsborough. See *Congressional Record*, Unbound Edition, Vol. 64, No. 67, p. 3942.

been with the Bank of England that J. A. Hobson has declared that the Bank rate is governed entirely by market rates of interest and that there is no connection between the Bank rate and reserves or between the Bank rate and prices.[43]

Before America entered the war it was also the avowed policy of the Regional Banks to maintain their rates above those prevailing in the market. In the early part of 1917 this practice was abandoned and has not as yet been restored as one of the principles governing the discount policy of the Regional Banks. It is most important that rates at the Reserve Banks be maintained above the market. The discount policy of the System, however, should not be governed entirely by fluctuations in market rates of interest. If the period under consideration is one in which prices are rising it is not enough to have the Bank rate above the market. The Reserve Banks should take measures to make it effective, i.e., should sell securities and other assets to force increases in the market rates.

Business Activity. As a guide to discount policies business activity should be studied in connection with price movements. The Board in conjunction with several of the Reserve Banks has prepared an excellent monthly index of the production of basic commodities in America. If an increase in production is accompanied by stationary prices, the Bank rate might remain unchanged or even be lowered. If, however, an increase in production coincides with rising prices, the Bank rate should be raised. In raising the Bank rate under such circumstances a central bank recognizes it as a duty to prevent the period of prosperity from degenerating into an orgy of speculation.

Economic and Political Conditions Abroad. Ordinarily conditions in foreign countries do not have to be considered directly by central bankers for their effects are generally manifested through price advances, foreign exchange fluctuations, and gold movements. Occasionally a very sudden event such as the outbreak of a war may cause rapid increases in the official rates of discount. This was true at the outbreak of the Great War, when the rate of the Bank of England was forced up as high as 10%.

Summary. Until the European nations return once more to a specie basis, commodity prices and interest rates in the open market should be the chief determinants of discount rate policy in the United States. Next in order of importance should come busi-

[43] *Gold, Prices and Wages,* Chapter 4. For a symposium on the relationship between the Bank rate and market rates, see *Trust Companies,* Vol. XXXIII, September 1921.

ness activity, the volume of bank loans, the reserve percentage, the foreign exchanges and economic and political conditions abroad. The officials of the System should seek to stabilize so far as possible the present price level. For whether they admit it or not the fact is indisputable that their discount policy can and does influence the general level of prices.

Central Banks and the Price Cycle. Earlier writers on banking did not emphasize price changes as a determinant of discount rate policy because these changes were reflected in fluctuations in the reserves and in the foreign exchanges. Now that all important nations but the United States have abandoned specie payments the foreign exchanges and the reserve percentage have lost their value as indicators of discount rate policy. Recent writers on the Bank rate therefore have attached greater importance to price fluctuations.

Reserve Banks and Rising Prices. Not only should the Bank rate be advanced as prices begin to move upwards but this action should be accompanied by other practices all of which are designed to check the rise. The other methods which should be employed by a central reserve bank are:

1) The issuance of warnings and opinions.
2) The exertion of moral pressure.
3) The curtailment of open-market operations.
4) The careful scrutiny of eligible paper which involves the problem of acceptability rather than that of strict eligibility.
5) The issuance of gold and gold certificates in place of bank notes.
6) Inducing the Government to place its funds solely with it (the central bank).

These other methods have to be employed for at times the Bank rate is not sufficient by itself to influence price movements. Or the Bank rate alone may be sufficient to influence price changes if enough time is allowed, but in many cases quick results are essential.

The Bank Rate. Even though it were not the intention of the Reserve System to rely exclusively on the Bank rate in modifying price fluctuations, the rate should be raised as soon as it becomes apparent that prices are rising. Nor should the raising of the Bank rates be confined to one Reserve District. It should be a general policy adopted by the entire System. The rates as raised should also vary from district to district in accord with the prevalent market rates. Thus cognizance will be taken

of the economic differences existing in the several sections of the country. Higher rates should prevail on paper of longer maturities [44] and on paper collateralled by government obligations. It is of particular importance in the agricultural districts where the maturity of the paper discounted by the System is longest that higher rates prevail on paper of longer maturities. This will serve to increase the liquidity of the Reserve Banks. Rates on war paper, as is true in the case of the European central banks, should rule higher than rates on commercial paper. Funds extended on the former are frequently, although of course not always, diverted to speculative and fixed capital purposes. Higher rates should be imposed on notes secured by warehouse, terminal or other similar receipts evidencing goods in storage. This will help prevent the carrying of goods for price increases. The following table has been inserted to show how rates might be fixed assuming that the basic rate on commercial paper maturing within fifteen days were 6%.

Commercial and agricultural paper including acceptances and fifteen-day advances secured by commercial paper but excluding commodity paper:

Maturity	*Rate*
15 days and under	6%
16–90	6½%
91 and above	7%
Commodity paper and all paper secured by government obligations:	7%

It is of course assumed that the rates as given in this table stand above the respective market rates.

If it should become necessary for one Reserve Bank to borrow from another the following principles should apply:

a) The Bank rates at the borrowing bank should stand above those at the lending institutions.

b) The rates paid by the borrowing Reserve Bank should rule above its Bank rates and should be progressed with the amount of the borrowings.

[44] Before the Joint Commission of Agricultural Inquiry Governor Harding stated that it was theoretically correct to grant lower rates on paper of shorter maturities. (*Hearing before the Joint Commission of Agricultural Inquiry,* Part 13, p. 306).

The rates as fixed by a Reserve Bank should be those on paper offered for discount for the first time. On renewals (if the law will permit) a rate higher by 1% than the rates prevailing on paper offered for discount for the first time should be imposed. This rule should apply not alone to the borrowings of a member bank from its Reserve Bank but also to inter-Reserve Bank borrowing.

The Issuance of Warnings and Opinions. Preceding, or along with, the rise in the Bank rate the officials of the System should voice their opinion of the dangers inherent in the situation. This may have the effect of making the business community cautious and reluctant to borrow for the purpose of expanding operations. On the other hand, as was true during 1919, the issuance of warnings and opinions may have no effect.

Moral Pressure. When the Bank rate is raised, the Reserve Banks should hold conferences with the member banks explaining to them the necessity for this action. In testifying before the Joint Commission of Agricultural Inquiry Governor Strong stated that in 1920 the Federal Reserve Bank of New York had sixteen conferences with the member banks to which eight hundred eighty-two banks were invited and four hundred ninety-six banks sent representatives and that during the first six months of 1921 fourteen such conferences were held with six hundred seventy-nine banks invited and four hundred forty-five represented [45] (exclusive of banks in the metropolitan area of New York City). Governor Strong explained that at these conferences the "character of the talk is educational, along the lines of avoiding misuse, for instance, of the facilities of the Federal reserve bank, not borrowing just for profit, the dangers of expansion, and all these matters." In addition to the holding of conferences Governor Strong said that a representative from the member bank relations department aimed to visit every member bank once a year and that its influence had been considerable in preventing abuses. In 1919, four hundred eighty-seven banks were visited; in 1920, one thousand ninety-three; and during the first six months of 1921, five hundred eleven. Should a large bank in New York City be borrowing excessively Governor Strong declared that the Reserve Bank ordinarily sent for the president or for the responsible vice-president to find the reason for the large and continuous borrowings. Not only should the Reserve Banks hold conferences

[45] *Hearing before the Joint Commission of Agricultural Inquiry*, Part 13, p. 704.

attended by member banks but should as well endeavor to set forth before the general business community the reasons necessitating the rise in the Bank rate.

The Curtailment of Open-market Operations. Not only should the Reserve Banks on the upward sweep of the price cycle withdraw from participating in the open market but they should dispose of the assets purchased during the preceding downward sweep. By disposing of their purchased assets (government obligations, municipal warrants and acceptances) they will sweep in funds from the market and will in this way help make their Bank rates effective. This policy was followed before the war by the Bank of England and the Reichsbank. Up to the present time the Reserve Banks have committed the error of enlarging their open-market operations at a time when prices were rising. The importance of the open-market powers of the Reserve Banks can not well be over-emphasized. Were it not for these the effectiveness of the Bank rate would depend entirely upon the extent to which the member banks rediscounted. These powers would be greatly enhanced by permitting the Reserve Banks to purchase promissory notes. As the volume of good single-name paper is much greater than the volume of acceptances the System would be enabled to build up a larger portfolio of bills. This they were permitted to do in early drafts of the Reserve Act. If the Reserve Banks were granted this power, they could buy promissory notes heavily on the downward sweep[46] and sell (for there is a ready market in commercial paper) as prices begin to advance. In the conduct of their open-market operations it is of the utmost importance that the twelve Reserve Banks follow a uniform policy. The desirability of coördinating more closely their open-market operations has been recognized by the Board.[47]

The Scrutiny of Commercial Paper. Governor Strong in his testimony before the Joint Commission of Agricultural Inquiry described in detail the method employed by the New York Reserve Bank in passing upon the applications for discounts and loans

[46] If the law were amended to allow the Reserve Banks to purchase promissory notes, they should do so vigorously on the downward sweep. In purchasing acceptances at the present time the Reserve Banks do not technically enter the market, for they purchase acceptances only as offered by dealers. The dealers state the rates at which they are willing to sell and the Reserve Banks either accept or reject their offer of sale. The Reserve Banks will not purchase unindorsed acceptances.

[47] *Federal Reserve Bulletin*, May 1923, p. 543. For a statement of the importance of the open-market operations of the Regional Banks, see, Warburg, *The Federal Reserve Banks and the Open Market for Acceptances*

of the member banks. On the application sent in by the member bank each note is entered separately, together with a description of the transaction which gave rise to it. In addition the executive committee, which passes upon all loans and discounts, reviews the condition of the bank in question, its borrowings from other sources, the record of its borrowings from the Reserve Bank, and the fluctuations in its loans on the New York Stock Exchange. The reasons for requesting the discount are inquired into, i. e., whether it is to build up a deficient reserve, or whether the bank has a debit balance at the clearing house, or whether it is for some other reason. This scrutiny is necessary, so Governor Strong asserted, because the Bank rates have ruled below the market. Were the opposite the case the Bank rate could of itself, he declared, control the situation.[48] In addition to the methods now employed by the Reserve Banks to scrutinize paper offered by member banks they should examine very carefully the statements of the makers of the notes, whenever they are submitted, and compute the more important of the ratios, such as the current ratio, the ratio of debt to net worth, of sales to receivables, and of sales to merchandise. On the upward sweep of the cycle they should insist, as Professor Sprague has very ingeniously urged, upon a rising current ratio.[49] According to Professor Sprague this would be analogous to the practice prevailing among banks of requiring larger margins during an upward movement on the Stock Exchange.

The Issuance of Gold and Gold Certificates. It has been suggested that the Reserve System should pay out only gold and gold certificates during an upward rise in prices and should refuse to issue Reserve notes. So far as this could be done without doing damage to the ability of our currency to meet seasonal needs, it would be excellent. The issuance of gold and gold certificates alone would force down the reserve percentage of the System at a much faster rate than would be the case if Reserve notes were issued. The reserve percentage would fall precipitously. The rapid decline in the percentage of reserves would serve as a warning to the business community and would rally

[48] *Hearing before the Joint Commission of Agricultural Inquiry*, Part 13, p. 710. See, also, p. 357.

[49] *Bank Management and the Business Cycle.* Before the Joint Commission of Agricultural Inquiry (Vol. 3, p. 775) it was stated that the Kansas City Reserve Bank rejects only 2% of the notes offered for discount. This seems a very small percentage and may be reflective of too ardent a desire to please the member banks.

public opinion around the efforts of the System to induce a contraction of credit.[50] Public opinion is often more willing to support restrictive measures on the part of a central bank whose reserve percentage is low than it would be if the same measures were adopted when the reserve percentage was higher.

Inducing the Government to Deposit Funds Solely with the Reserve Banks. It would assist the Reserve Banks in making their Bank rates effective and in controlling the expansion of credit during the upward sweep of the price cycle if the Government were to place its funds at such a time solely with them. Experience has shown in England that the Bank rate is rendered more effective when the Government places its receipts at the tax payment periods with the Bank of England. Were the United States Government to follow this practice, the checks deposited by it would reduce (at least temporarily) the balances of the member banks with the Reserve Bank and force them to rediscount or send in cash items in order to build up their reserve balances. The Bank rate would thus tend to become effective.

In addition to the methods discussed, other suggestions have been offered as to policies the Reserve Banks should adopt to control credit expansion and price increases. Should the inflationary movement possess great strength the Reserve Banks might call for the unpaid half of the subscriptions made by member banks in the stock of the Reserve Banks. At the present time this would sweep about 110 millions of dollars into the vaults of the System. The transference of this sum from the member banks to the Reserve Banks would undoubtedly have considerable influence in making the Bank rates effective and in slowing up the expansion of credit. Of course this method could be utilized but once and should be reserved for some great emergency. The suggestion has been made that the national bank and state bank examiners should make most careful examinations of member banks during the upward movement in prices. They should examine the portfolios carefully, looking for abuses in the use of the acceptance, unduly large extensions of credit to any one interest, and for poor and doubtful paper.

Federal Reserve Banks and the Crisis. During a crisis the Reserve Banks should abandon many of the policies which they have been urged to employ when prices are rising. The Bank rate should be maintained at a high figure but discounts and

[50] See Leffingwell, *Discussion of Professor Sprague's Paper*, etc., p. 36.

loans should be extended with greater liberality. The Regional Banks should begin to participate in the open market. Until such a time as the Reserve Banks are permitted to purchase commercial paper they may have to place chief reliance on government obligations, purchasing these as prices decline and selling them once prices have started on the upward trend. Federal Reserve notes should be issued and gold and gold certificates held in the vaults. Every assistance possible should be rendered by the Reserve Banks to the solvent but temporarily embarrassed member bank. The Reserve System should be willing to take risks and to lose money if by this action they can prevent a complete breakdown of the credit and banking machinery of the country. This was the policy which they so wisely followed through 1920.

The Reserve Banks and the Business Depression. During the downward sweep of the cycle, as during the crisis, the Reserve Banks should become active participants in the open market, purchasing warrants, government obligations and acceptances. They should issue Federal Reserve notes, retaining their stock of gold and gold certificates unless of course the redemption of any paper money is demanded. The Bank rate should be lowered but only as the market rate falls. It would no longer be necessary to discriminate in rates against commodity paper. The Government should be induced to place its funds mainly with depositary banks. The System could well afford to take a more liberal attitude toward paper offered for discount and not subject it to the same close scrutiny which it would were prices rising.

The Reserve Banks not Emergency Institutions. The foregoing discussion should emphasize the elementary fact that the Reserve Banks are not and never were intended to be emergency institutions in the sense that their functions are simply to issue currency in emergencies and alleviate crises, as the Aldrich-Vreeland associations were intended to do. While the Reserve Banks have eliminated money panics, their scope of activities is much broader than this. They should and must function continuously if they are to mitigate cyclic fluctuations and to control the apportionment of credit. They should not be thought of as emergency institutions any more than the Bank of England, the Bank of France, or the Reichsbank are so considered. On the downward sweep of the cycle the Reserve Banks should expand their open-market operations which will assume more importance than their discount operations during such a period. On the up-

ward sweep of the cycle the reverse should be true. During the crisis both their discount and open-market operations should be of equal importance. They should continuously exert their good offices to raise the standard of commercial paper in America. They should keep in touch, as they have, with the trend of economic and political events at home and abroad in order that they may be in a position to advise the American banker and business man. As the European nations return to a gold basis one by one, or as their currencies become stabilized, the System should seriously consider the desirability of building up a portfolio of foreign bills as did the Reichsbank. The question of establishing agencies in various parts of the world, as agencies have been established in Havana, should be discussed with the view of making America a more important factor as a financier of international trade. Any attempt to relegate the Regional Banks to the position which would have been the lot of the National Reserve Association of the United States (the Aldrich Plan) would immediately impair if not entirely destroy the greater part of their usefulness.

Political Influence in Reserve Policies. While we may be thankful that the onslaught of the agriculturalists has done no more damage than it has, the future of the Reserve System is not altogether promising. Politics has begun to play a more important rôle in choosing the members of the Board. Politicians assume that the discount rate policies of the System may be controlled in the interests of party leadership. Both parties put the blame on the other for the deflation of prices. The party in power during the revival which occurred the second half of 1921 and through 1922 claimed credit for this in having forced reductions in the Bank rate. A Secretary of the Treasury has recently indulged in the indiscreet practice of forecasting discount rate changes. Interference by politicians in the affairs of the Reserve Banks is of the gravest danger and will prevent their administration and control along the most scientific lines. Those interested in sound monetary and banking policies in America should rally to protect the System from the attacks of the self-seeking politician and should endeavor to place its operation in the hands of disinterested experts.

Fundamental Propositions in Discount Policies. The following propositions should be regarded as fundamental by the officials of the System when they commence formulating their discount and credit policies:

1) Fluctuations in the Bank rate and all discount policies of the system should be determined principally by changes in the general level of prices.
2) The Bank rate should rule above market rates and should vary from district to district in accord with the economic development of the different parts of the country and should vary with the type and maturity of paper offered for discount.
3) The Regional Banks should adopt a uniform open-market policy which should be adjusted to price fluctuations.
4) If America is to continue on the gold standard, it must be maintained inviolate. Any obstacle placed in the way of redeeming the paper money and deposit currency of the country in gold would nullify all attempts to improve America's position as a short-term financier of international trade and an exporter of long-term capital. In view of the huge gold imports, however, the better policy to follow would be to lower the present tariff duties and to declare an embargo on gold imports. Gold exports would be allowed and the redemption of paper money in gold would continue. The mints would have to be closed to the coinage of domestically mined gold. Such action would assist the Reserve Banks in their control of credit and prices.
5) The officials of the System should recognize that the Reserve Banks are not emergency institutions but were organized to operate continuously in the interest of the whole country.

The Reserve Banks were not formed merely to prevent money panics or to relieve autumnal tensions in the money markets, though both of these purposes have been realized. They were not organized to enable member banks to rediscount at a profit. They are not wholesalers of credit. Theirs is the function of promoting stability in prices and consequently in the economic life of the nation.

THE END

APPENDIX A

BIBLIOGRAPHY

The books or articles which proved of greatest value in this study are marked with an asterisk.

Adams, Henry C.

Public Debts. New York: D. Appleton and Company, 1890.

Financial Management of a War. New York: D. Appleton and Company, 1898.

Agger, Eugene, E.

"The Federal Reserve System." *The Political Science Quarterly.* Vol. XXIX. No. 2. June, 1914.

* "The Commercial Paper Debate." *The Journal of Political Economy.* Vol. XXII. No. 7. July, 1914.

"Commercial Paper and the Federal Reserve Board." *The Annals of the American Academy of Political and Social Science.* Vol. LXIII. January, 1916.

"The Economics of War Saving." *The Commercial and Financial Chronicle.* American Bankers' Convention Section. Vol. 105. No. 2729. October 13, 1917.

Organized Banking. New York: Henry Holt & Co., 1918.

"The Development of an Open Market for Commercial Paper." *The Annals of the American Academy of Political and Social Science.* Vol. XCIX. January, 1922.

Aldrich, Nelson W.

* "Banking Reform in the United States." *Proceedings of the Academy of Political Science in the City of New York.* Vol. IV. No. 1. October, 1913.

Allen, J. E.

The War Debt and How to Meet It with an Examination of the Proposed "Capital Levy." London: Methuen & Co. Ltd., 1919.

Anderson, B. M. Jr.

* *Effects of the War on Money, Credit and Banking in France and the United States.* Carnegie Endowment for International Peace. Preliminary Economic Studies of the War,

Edited by David Kinley, No. 15. New York: Oxford University Press, 1919.

"Three and a Half Billion Dollar Floating Debt of Europe to Private Creditors in America." *The Chase Economic Bulletin.* Vol. I. No. 1. October 5, 1920.

ANDERSON, FRANK F.

"Fundamental Factors in War Finance." *The Journal of Political Economy.* Vol. 25. No. 9. November, 1917.

ANDRÉADÈS, A.

* *History of the Bank of England.* London: P. S. King & Son, 1909.

ANDREW, A. PIATT

* "The Crux of the Currency Question." *Yale Review.* New Series. Vol. II. No. 4. July, 1913.

"Criticisms of the Note-Issue Provisions of the Owen-Glass Bill." *Proceedings of the Academy of Political Science in the City of New York.* Vol. IV. No. 1. October, 1913.

* "The Essential and the Unessential in Currency Legislation." *An address delivered before the Senior Class of the Sheffield Scientific School, Yale University.* New Haven, Conn., Yale University Press, 1913.

ARETZ, DR. PETER

* *Die Entwicklung der Diskontpolitik der Bank von England—1780–1850.* Berlin: Carl Heymanns Verlag, 1916.

AUBRY, MAURICE

Les Banques d'Émission et d'Escompte. Paris: Guillaumin et Cie., November, 1864.

AYRE, GEORGE L.

* "How to Strengthen and Maintain Our National Gold Reserves." *The Bankers' Insurance Managers' and Agents' Magazine* (London). Vol. LXXII. No. 692. November, 1901.

BAGEHOT, WALTER

* *Lombard Street.* New York: Charles Scribner's Sons, 1912.

BASSETT, ARTHUR TILNEY

Gladstone's Speeches. London: Methuen and Co., 1916.

BASTABLE, C. F.

Public Finance. London: Macmillan and Company, 1895.

BECKHART, B. H.

"Outline of Banking History—From the First Bank of the

United States Through the Panic of 1907." *The Annals of the American Academy of Political and Social Science.* Vol. XCIX. January, 1922.

Berridge, William A.

"An Analysis of the Exports of Merchandise from the United States." *The Review of Economic Statistics.* Harvard University Committee on Economic Research. Preliminary Volume I, 1919. Cambridge, Mass., Harvard University Press, 1920.

"The World's Gold Supply." *The Review of Economic Statistics.* Harvard University Committee on Economic Research. Preliminary Volume 2, 1920.

Beveridge, W. H.

"Weather and Harvest Cycles." *The Economic Journal.* Vol. XXXI. No. 124. December, 1921.

Blakey, Roy G.

"The War Revenue Act of 1917." *The American Economic Review.* Vol. VII. No. 4. December, 1917.

Bogart, E. L.

Direct and Indirect Costs of the Great World War. New York: Oxford University Press, 1919.

War Costs and Their Financing. New York: D. Appleton and Company, 1921.

Brand, The Hon. R. H.

War and National Finance. London: Edward Arnold and Co., 1921.

Brown, James Douglas

The Open Market Operations of the Federal Reserve Banks. An unpublished essay written in 1922 on file with the Department of Economics, Princeton University, Princeton, New Jersey.

Bulkley, Robert J.

"The Federal Reserve Act: A Reply to Criticisms." *Proceedings of the Academy of Political Science in the City of New York.* Vol. IV. No. 1. October, 1913.

Bullock, Charles J.

"Financing the War." *The Quarterly Journal of Economics.* Vol. XXXI. No. 3. May, 1917.

"War Finance." *Proceedings of the Eleventh Annual Conference under the Auspices of the National Tax Association.* New Haven: National Tax Association, 1918.

Bullock, Charles J., Williams, John H., Tucker, Rufus S.

"The Balance of Trade of the United States." *The Review of Economic Statistics.* Preliminary Vol. No. 1, 1919. Cambridge, Mass., Harvard University Press, 1920.

Bullock, Charles J., Sprague, O. M. W., Donham, W. B.

* "Federal Reserve Bank Policy—The Need of a Definite Statement." *Harvard Business Review.* Vol. I. No. 2. January, 1923.

Cannan, Edwin

* *The Paper Pound of 1797–1821.* London: P. S. King and Son, Ltd., 1919.

Carver, Thomas Nixon

War Thrift. New York: Oxford University Press, 1919.

Case, J. Herbert

"Preparation for War and Liberty Loans." *The Annals of the American Academy of Political and Social Science.* Vol. XCIX. No. 188. January, 1922.

Cassel, Gustav

Theoretische Sozialökonomie. Leipzig: C. F. Wintersche Verlagshandlung, 1918.

"Further Observations on the World's Monetary Problem." *The Economic Journal.* Vol. XXX. No. 117. March, 1920.

* "Some Leading Propositions for an International Discussion of the World's Monetary Problem." *The Annals of the American Academy of Political and Social Science.* Vol. LXXXIX. May, 1920.

* *Money and Foreign Exchange after 1914.* London: Constable and Co., Ltd., 1922.

Catterall, Ralph C. H.

The Second Bank of the United States. Chicago: The University of Chicago Press, 1903.

Chandler, Henry A. E.

"The British Commercial Money Market." *Commerce Monthly.* Vol. V. No. 10. February, 1924.

Chapman, John M.

Fiscal Functions of the Federal Reserve Banks. New York: The Ronald Press, 1923.

Clare, George

The A. B. C. of the Foreign Exchanges. London, Macmillan and Co., Ltd., 1919.

Conant, Charles A.

The Principles of Money and Banking, Vols. I and II. New York: Harper and Bros., 1905.

Conway, Thomas, Jr.

"The Financial Policy of the Federal Reserve Banks." *The Journal of Political Economy.* Vol. XXII. No. 4. April, 1914.

"The Influence of the Federal Reserve Act upon Commercial Borrowing." *The Annals of the American Academy of Political and Social Science.* Vol. LIX. May, 1915.

Courtais, Alphonse

Histoire des Banques en France. Paris: Librairie Guillaumin et Cie., 1881.

Cross, Ira B.

* "The Gold Policy of the United States." *The Economic Journal.* Vol. XXIX. No. 113. March, 1919.

Davenport, H. J.

"The War-Tax Paradox." *The American Economic Review.* Vol. IX. No. 1. March, 1919.

"Amendments to Federal Reserve System Imperative." *Trust Companies.* Vol. XXXI. No. 4. October, 1920.

Davis, Andrew McFarland

The Origin of the National Banking System. Senate Document No. 582. 61st Congress. 2d Session. Washington: Government Printing Office, 1910.

Davis, Joseph S.

"World Banking and Currency: A Review of Recent Developments." *The Review of Economic Statistics.* Preliminary Vol. II. August 25, 1920.

"World Banking, Currency and Prices, 1920–1921." *The Review of Economic Statistics.* Preliminary Vol. III. Number 9. September, 1921.

Dewey, Davis R.

The Second Bank of the United States. National Monetary Commission. Senate Document No. 571. 61st Congress. 2d Session. Washington: Government Printing Office, 1910.

The Financial History of the United States. Sixth Edition. New York: Longmans, Green and Company, 1918.

Dietzel, Heinrich

Kriegssteuer oder Kriegsanleihe? Tübingen: Verlag von J. C. B. Mohr, 1912.

Dodge, H. J.

"The Aldrich-Vreeland Emergency Currency." *The Annals of the American Academy of Political and Social Science.* Vol. XCIX. January, 1922.

Dunbar, Charles F.

The Theory and History of Banking. Third Edition. Enlarged by Oliver M. W. Sprague. New York and London: G. P. Putnam's Sons, 1917.

Duncan, W. J.

Notes on the Rate of Discount in London, from May, 1866, to the Close of 1873; With Continuation to the Close of 1876. Edinburgh: Lorimer & Gillies, 1877.

Durand, E. Dana

"Taxation versus Bond Issues for Financing the War." *The Journal of Political Economy.* Vol. XXV. No. 9. November, 1917.

Edgeworth, F. Y.

The Cost of War and Ways of Reducing It Suggested by Economic Theory. Oxford: Oxford University Press, 1915.

Currency and Finance in Time of War. Oxford: Oxford University Press, 1917.

Ernst, J.

* *Diskontopolitik. Handwörterbuch der Schweizerischen Volkswirtschaft, Socialpolitik, und Verwaltung. Herausgegeben von Dr. jur. Naum Reichesberg.* Bern: Verlag Encyklopädie, 1903.

Escher, Franklin

Foreign Exchange Explained. New York: The Macmillan Co., 1918.

Farwell, John V.

"Federal Reserve Rate Cannot be Determined by a Formula." *Trust Companies.* Vol. XXXIII. No. 3. September, 1921.

"Expansion and Contraction as Seen by a Business Man." *The Annals of the American Academy of Political and Social Science.* Vol. XCIX. January, 1922.

Fetter, Frank A.

The Principles of Economics. New York: The Century Company, 1904.

Economic Principles. New York: The Century Company, 1915.

Modern Economic Problems. Second Edition, Revised. New York: The Century Company, 1922.

FILENE, EDWARD A.

"Business as Usual." *The Annals of the American Academy of Political and Social Science.* Vol. LXXVIII. July, 1918.

FISHER, IRVING

The Rate of Interest. New York: The Macmillan Company, 1907.

* *The Purchasing Power of Money.* New York: The Macmillan Company, 1912.

"How the Public Should Pay for the War." *The Annals of the American Academy of Political and Social Science.* Vol. LXXVIII. July, 1918.

FISK, HARVEY E.

Our Public Debt. New York: Bankers Trust Company, 1919.

English Public Finance. New York: Bankers Trust Company, 1920.

FORGAN, JAMES B.

"Lowering of Rediscount Rates May Precipitate Renewed Inflation." *Trust Companies.* Vol. XXXIII. No. 3. September, 1921.

* "Currency Expansion and Contraction." *The Annals of the American Academy of Political and Social Science.* Vol. XCIX. January, 1922.

FOWLER, CHARLES N.

The United States Reserve Bank. Washington: Hamilton Book Company, 1922.

FOXWELL, H. S.

A review of "The Paper Pound of 1797–1821" by Edwin Cannan. *Journal of the Royal Statistical Society.* Vol. LXXXIII. Part II. March, 1920.

FRIDAY, DAVID

"Prices and Excess Profits Taxes." *The Annals of the American Academy of Political and Social Science.* Vol. LXXXIX. No. 178. May, 1920.

Profits, Wages and Prices. New York: Harcourt, Brace and Howe, 1920.

FRIEDMAN, ELISHA M.

American Problems of Reconstruction. New York: E. P. Dutton and Company, 1918.

International Finance and Its Reorganization. New York: E. P. Dutton and Company, 1922.

Friedrich, Dr. Johannes

* *Die Währungs—und Diskontopolitik der Deutschen Reichsbank.* Breslau: Josef Max Verlag, 1895.

Fuller, Oliver C.

"Policy in accord with Money Market Tendency." *Trust Companies.* Vol. XXXIII. No. 3. September, 1921.

Garrett, Paul Willard

"American Control over War Prices." *The Annals of the American Academy of Political and Social Science.* Vol. LXXXIX. May, 1920.

Gephart, W. F.

Inflation in Relation to the Bank Reserve and the Business Cycle. A pamphlet published by the First National Bank in St. Louis, 1923.

Gibson, A. H.

* *Bank Rate—The Bankers' Vade Mecum.* London: Simpkin, Marshall & Co., 1910.

* "Bank Rate Chart and Statistics." *Bankers' Insurance Managers' and Agents' Magazine* (London). Vol. XCV. No. 827. February, 1913.

Gidney, R. M.

"Relations of Reserve Banks to Member Banks and Inter-Relations of Federal Reserve Banks." *The Annals of the American Academy of Political and Social Science.* Vol. XCIX. No. 188. January, 1922.

Giffen, Robert

Essays in Finance. New York: G. P. Putnam's Sons, 1886.

Gilbart, James W.

The Principles and Practice of Banking. London: Bell and Baldy, 1871.

Glass, Carter

"The Opposition to the Federal Reserve Bank Bill." *Proceedings of the Academy of Political Science in the City of New York.* Vol. IV. No. 1. October, 1913.

"The Genesis of the Federal Reserve Law." *The Commercial and Financial Chronicle.* American Bankers' Convention Section. Vol. XCIX. No. 2574. October 24, 1914.

Goldenweiser, E. A.

"Effects of Further Gold Imports on Our Banking Situa-

tion." *The American Economic Review.* Vol. XIII. No. 1. March, 1923.

GOSCHEN, VISCOUNT

* *Essays and Addresses on Economic Questions.* London: Edward Arnold, 1905.

The Theory of the Foreign Exchanges. London: Effingham Wilson, 1919.

GOTTLIEB, L. R.

"Debts, Revenues and Expenditures and Note Circulation of the Principal Belligerents." *The Quarterly Journal of Economics.* Vol. XXXIV. No. 1. November, 1919.

HAIG, ROBERT MURRAY

The Taxation of Excess Profits in Great Britain. *The American Economic Review.* Vol. X. No. 4. Supplement. December, 1920.

HAMILTON, WALTON HALE

Current Economic Problems. Chicago: The University of Chicago Press, 1915.

HANEY, LEWIS H.

"Price Fixing in the United States during the War." *Political Science Quarterly.* Vol. XXXIV. Nos. 1, 2, and 3, 1919.

HANKEY, THOMSON

The Principles of Banking. London: Effingham Wilson, 1873.

HANSARD, LUKE

* "The Efficiency of Reserves." *Bankers' Insurance Managers' and Agents' Magazine* (London). Vol. LXXI. No. 684. March, 1901.

HANSEN, ALVIN H.

"The Sequence in War Prosperity and Inflation." *The Annals of the American Academy of Political and Social Science.* Vol. LXXXIX. No. 178. May, 1920.

HARDING, W. P. G.

"The Results of the European War on America's Financial Position." *The Annals of the American Academy of Political and Social Science.* Vol. LX. July, 1915.

"The Federal Reserve Law and Its Amendments." *The Commercial and Financial Chronicle.* Vol. CIII. No. 2677. October 14, 1916.

"State Bank Membership in the Federal Reserve System." *The Commercial and Financial Chronicle.* Bankers' Convention Section. October 13, 1917.

"Inflation and Curtailment of Non-Essential Credits." *Trust Companies.* Vol. XXVII. No. 3. September, 1918.

"Maintaining and Strengthening the Nation's Gold Reserve. *Trust Companies.* Vol. XXVII. No. 6. December, 1918.

"Reducing Inflation and Present Status of the Nation's Currency." *Trust Companies.* Vol. XXIX. No. 2. August, 1919.

"Control of Credit and Note Issue." *Trust Companies.* Vol. XXXI. No. 4. October, 1920.

The Proper Adjustment of Credit to Production and Distribution. Address before The Lawyers Club, New York City, February 5, 1921.

The Federal Reserve System—What It Is and What It Is Not. An address at the "Made-In-Carolinas" Exposition at Charlotte, North Carolina, September 22, 1921. Published by the Federal Reserve Bank of Philadelphia.

The Federal Reserve System As Related to American Business. Address before the Chamber of Commerce, Washington, D. C., December 13, 1921. Issued by the Federal Reserve Bank of New York.

"Principles Governing the Discount Rate." *The Annals of the American Academy of Political and Social Science.* Vol. XCIX. January, 1922.

HARISTOY, JUST

Finances D'Après-Guerre et Conscription Des Fortunes. Paris: Librairie Félix Alcan, 1918.

HAUSER, DR. RICHARD

Die Amerikanische Bank Reform. Jena: Verlag von Gustav Fischer, 1914.

HAWTREY, R. G.

"The Bank Restriction of 1797." *The Economic Journal.* Vol. XXVIII. No. 109. March, 1918.

* *Currency and Credit.* London: Longmans, Green and Co., 1919.

* *Monetary Reconstruction.* London: Longmans, Green and Co., 1923.

HAYES, C. J. H.

A Political and Social History of Modern Europe. New York: The Macmillan Co., 1917.

HEILIGENSTADT, DR. CARL

* "Die Internationalen Goldbewegungen, ihre Ursachen, ihre

Richtungen, und die Stellung der Bankpolitik ihnen gegenüber." *Schmollers Jahrbuch für Gesetzgebung, Verwaltung, und Volkswirtschaft im Deutschen Reich.* Achtzehnter Jahrgang. 1894. pp. 453–518.

HELFFERICH, DR. KARL

Die Reform des deutschen Geldwesens nach der Gründung des Reiches, II. Leipzig: Verlag von Duncker & Humblot, 1898.

HEPBURN, A. BARTON

"Criticisms of the Proposed Federal Reserve Bank Plan." *Proceedings of the Academy of Political Science in the City of New York.* Vol. IV. No. 1. October, 1913.

A History of Currency in the United States. New York: The Macmillan Company, 1915.

"Discussions of Government's Financial Policies in Relation to Inflation." *Proceedings of the Academy of Political Science in the City of New York.* Vol. IX. No. 1. June, 1920.

HEPBURN, A. BARTON, AND ANDERSON, BENJAMIN M.

* "The Gold and Rediscount Policy of the Federal Reserve Banks." *The Chase Economic Bulletin.* Vol. I. No. 5. July 20, 1921.

HERTZKA, THEODOR

Das Wesen des Geldes. Leipzig: Verlag von Duncker & Humblot, 1887.

HESS, RALPH H., AND GODFREY, LE ROY D.

"The European Discount System—Possible Advantages of its Adoption in the United States." *Moody's Magazine.* Vol. XIV. August and September, 1912.

HIRST, F. W.

The Political Economy of War. New York: E. P. Dutton and Co., 1915.

HOBSON, J. A.

Gold, Prices and Wages. London: Methuen & Co., 1913.

Taxation in the New State. New York: Harcourt, Brace and Howe, 1920.

HOLLANDER, JACOB H.

"The Probable Effects of the New Currency Act on Bank Investments." *The Journal of Political Economy.* Vol. XXII. No. 5. May, 1914.

* *War Borrowing.* New York: The Macmillan Company, 1919.

"Inflation." *The Annals of the American Academy of Political and Social Science.* Vol. LXXXIX. May, 1920.

"Discussion of Government's Financial Policies in Relation to Inflation." *Proceedings of the Academy of Political Science in the City of New York.* Vol. IX. No. 1. June, 1920.

HOUSTON, D. F.

"Steps to Victory." *Proceedings of the Academy of Political Science in the City of New York.* Vol. VII. No. 4. February, 1918.

HULBERT, E. D.

"Rate should be above Market Rates." *Trust Companies.* Vol. XXXIII. No. 3. September, 1921.

HULL, W. H.

Practical Problems in Banking and Currency. New York: The Macmillan Company, 1907.

HUME, DAVID

Political Discussions. Edinburgh: Printed by R. Fleming, 1752.

HUNTINGTON, A. T., and MAWHINNEY, R. J.

Laws of the United States concerning Money, Banking and Loans, 1778–1909. Senate Document No. 580. 61st Congress. 2d Session. Washington: Government Printing Office, 1910.

INGLE, WILLIAM

"Credit Reformation." *The Annals of the American Academy of Political and Social Science.* Vol. LXIII. January, 1916.

JAEGER, RUTH M.

Stabilization of the Foreign Exchanges. New York: Press of Isaac Goldmann Co., 1922.

JAY, PIERRE

* *The Development of a Discount Market and Its Relation to Our Foreign Trade.* An address delivered at the Third National Foreign Trade Convention. New Orleans, La., January 27–29, 1916. New York: National Foreign Trade Council, 1916.

"War-Time Services Rendered by the Federal Reserve Banks." *Trust Companies.* Vol. XXV. No. 4. October, 1917.

"The Responsibility of Bankers for Credit Control." *Trust Companies.* Vol. XXX. No. 5. May, 1920.

JEVONS, W. STANLEY

Investigations in Currency and Finance. London: Macmillan & Co., 1884.

JOHNSON, JOSEPH FRENCH

"The Note-Issue Provisions of the Owen-Glass Bill." *Proceedings of the Academy of Political Science in the City of New York.* Vol. IV. No. 1. October, 1913.

JOHNSTON, PERCY

"Unusual Conditions Justify Reduction of Federal Reserve Rate." *Trust Companies.* Vol. XXXIII. No. 3. September, 1921.

JUGLAR, CLÉMENT

Des Crises Commerciales et De Leur Retour Périodique. Paris: Librairie Guillaumin et Cie., 1889.

KAHN, DR. JULIUS

Geschichte des Zinsfusses in Deutschland seit 1815 und die Ursachen Seiner Veränderung. Stuttgart: Verlag der J. G. Cotta'schen Buchhandlung, 1884.

KANE, THOMAS P.

The Romance and Tragedy of Banking. New York: The Bankers Publishing Company, 1923.

KELLEY, CORNELIUS F.

Position of Silver under the Pittman Act. Published by the American Institute of Mining and Metallurgical Engineers, Inc., 29 West 39th Street, New York, 1921.

KEMMERER, EDWIN WALTER

* *Money and Credit Instruments in their Relation to General Prices.* New York: Henry Holt and Co., 1909.

* "Some Public Aspects of the Aldrich Plan of Banking Reform." *The Journal of Political Economy.* Vol. XIX. No. 10. December, 1911.

"Banking Reform in the United States." *The American Economic Review.* Vol. III. No. 1. Supplement. March, 1913.

"The Bank-Note Issue of the Proposed Federal Reserve Banks." *Proceedings of the Academy of Political Science in the City of New York.* Vol. IV. No. 1. October, 1913.

Modern Currency Reforms. New York: The Macmillan Co., 1916.

* "Inflation." *The American Economic Review.* Vol. VIII. No. 2. June, 1918.

"Interest Rates: Present and Future as Affected by the War." *Trust Companies.* Vol. XXVII. No. 3. September, 1918.

"The War and Interest Rates." *The American Economic Review.* Vol. IX. No. 1. Supplement. March, 1919.

The A B C of the Federal Reserve System. Princeton: The Princeton University Press, 1919.

"Rediscounting and the Federal Reserve Discount Rate." *Journal of the American Bankers Association.* Vol. XII. No. 10. April, 1920.

**High Prices and Deflation.* Princeton: The Princeton University Press, 1920.

* "Causes and Progress of Inflation." *Proceedings of the Academy of Political Science in the City of New York.* Vol. IX. No. 1. June, 1920.

Six Lectures on the Federal Reserve System Given at the Federal Reserve Bank of Philadelphia in October and November, 1920. Printed by the Bank for Distribution to Employees Only. Not Revised by the Author for Publication.

Bankers Aid in Stabilizing Prices. New York Evening Post, October 24–25, 1921.

"Doing Something for Gold." *An article on file at the Princeton University Library.*

KEYNES, JOHN MAYNARD.

"Monetary Reform." New York: Harcourt, Brace and Company, 1924.

KING, WILLFORD I.

"Is Production Keeping Pace with Population." *Bankers Statistics Corporation.* Special Service. Vol. II. No. 12. August 24, 1920.

"Is Our Currency Elastic." *Bankers Statistics Corporation.* Weekly Service. Vol. II. No. 23. September 21, 1920. Interlocking chart series, no. 4.

KIRKALDY, ADAM W.

Credit, Industry and the War. London: Sir Isaac Pitman and Sons, Ltd., 1915.

British Finance During and After the War, 1914–1921. London: Sir Isaac Pitman and Sons, Ltd., 1921.

LANDMANN, DR. JULIUS

**Die Principien der Diskontopolitik.* Bern: Buchdruckerei Berger und Albrecht, 1900.

LAUGHLIN, J. LAURENCE

* *Banking Reform.* Chicago: The National Citizens' League, 1912.

"The Banking and Currency Act of 1913". *The Journal of Political Economy.* Vol. XXII. Nos. 4 and 5. April and May, 1914.

Banking Progress. New York: Charles Scribner's Sons, 1920.

LAW, WILLIAM T.

* "Essentials in Developing a Broad Discount Market for Acceptances." *Trust Companies.* Vol. XXVIII. No. 3. March, 1919.

LAWSON, W. R.

"Lombard Street under Foreign Control." *Bankers' Insurance Managers' and Agents' Magazine* (London). Vol. LXXI. No. 684. March, 1901.

LEFFINGWELL, R. C.

"Treasury Methods of Financing the War in Relation to Inflation." *Proceedings of the Academy of Political Science in the City of New York.* Vol. IX. No. 1. June, 1920.

* Discussion of Prof. Sprague's paper entitled "The Discount Policy of the Federal Reserve Banks." *The American Economic Review.* Vol. XI. No. 1. March, 1921.

LÉVY, RAPHAEL-GEORGES

"Le Rôle des Banques D'Émission Dans La Guerre Actuelle." *La Réforme Sociale.* Septième Sèrie. Tome IX. 8 mars 1915.

LIESSE, ANDRÉ

Evolution of Credit and Banks in France. National Monetary Commission. Senate Document No. 522. 61st Congress. 2nd Session. Washington: Government Printing Office, 1909.

LITMAN, SIMON

Prices and Price Control in Great Britain and the United States during the World War. New York: Oxford University Press, 1920.

LOGAN, WALTER S.

"Amendments to the Federal Reserve Act." *The Annals of the American Academy of Political and Social Science.* Vol. XCIX. No. 188. January, 1922.

LOTZ, W.

* *Diskonto und Diskontopolitik. Handwörterbuch der Staatswissenschaften.* Herausgegeben von Dr. J. Conrad, Dr.

L. Elster, Dr. W. Lexis, Dr. Edg. Loening. Jena: Verlag von Gustav Fischer, 1909.

Lumm, Dr. von

"Influence de L'Évolution Moderne sur la Politique D'Escompte." *Revue Économique Internationale.* Vol. III. No. 2. 9e Année. August, 1912. Pp. 290–320.

Macdonald, Robert A.

* "The Rate of Interest since 1844." *Journal of the Royal Statistical Society.* Vol. LXXV. Part IV. March, 1912.

McDougal, J. B.

"Agricultural and Commercial Loans." *The Annals of the American Academy of Political and Social Science.* Vol. XCIX. January, 1922.

Macleod, Henry Dunning

* *The Theory and Practice of Banking.* Vol. II. London: Longman, Brown, Green, and Longmans, 1855.

MacVeagh, Franklin

"Banking and Currency Reform." *The Journal of Political Economy.* Vol. XIX. No. 10. December, 1911.

Magee, James D.

"Call Rates and the Federal Reserve Board." *The American Economic Review.* Vol. X. No. 1. March, 1920.

Mallet, Bernard

British Budgets 1887–88 to 1912–13. London: Macmillan and Co., Ltd., 1913.

Marshall, Alfred

Principles of Economics. London: Macmillan and Co., Ltd., 1916.

Money Credit & Commerce. London: Macmillan and Co., Ltd., 1923.

Mayne, Dr. Reginald

* *Der Discont.* Jena: Verlag von Gustav Fischer, 1899.

Meyer, Hermann H. B., and Slade, William Adams

* *Select List of References on the Monetary Question.* Washington: Government Printing Office, 1913.

Mill, John Stuart

Principles of Political Economy. New York: D. Appleton and Co., 1874.

Miller, A. C.

"The Federal Reserve System: Looking Ahead." *The Economic World.* New Series. Vol. XII. No. 19. November 4, 1916.

"The Price Situation: Our Pressing Financial and Economic Problem." *Trust Companies.* Vol. XXXVIII. No. 1. January, 1919.

"After-War Adjustment: The Present Price Outlook." *Trust Companies.* Vol. XXVIII. No. 6. June, 1919.

"Our Industrial and Economic Disorders." *Trust Companies.* Vol. XXIX. No. 5. November, 1919.

* "Federal Reserve Policy." *The American Economic Review.* Vol. XI. No. 2. June, 1921.

"Curves of Expansion and Contraction 1919–1921." *The Annals of the American Academy of Political and Social Science.* Vol. XCIX. January, 1922.

MITCHELL, WESLEY CLAIR

Business Cycles. Berkeley: The University of California Press, 1913.

History of Prices during the War. War Industries Board. Washington: Government Printing Office, 1919.

"Prices and Business in the Near Future." *Bankers Statistics Corporation.* Vol. I. No. 17. Section Two. February 10, 1920.

* "Prices and Reconstruction." *The American Economic Review.* Vol. X. No. 1. Supplement. March, 1920.

MOORE, H. L.

"Generating Cycles of Products and Prices." *The Quarterly Journal of Economics.* Vol. XXXV. February, 1921.

MORROW, DWIGHT W.

"The Meaning of the War Savings Movement." *Proceedings of the Academy of Political Science in the City of New York.* Vol. VII. No. 4. February, 1918.

MOULTON, HAROLD G

"Problems in Industrial Mobilization." *The Annals of the American Academy of Political and Social Science.* Vol. LXXVIII. July, 1918.

"War Finance and the Price Level." *The Journal of Political Economy.* Vol. XXVII. No. 8. October 1919.

"Will Prices Fall?" *The Journal of Political Economy.* Vol. XXVII. No. 9. November, 1919.

* "Banking Policy and the Price Situation." *The American Economic Review.* Vol. X. No. 1. Supplement. March, 1920.

The Financial Organization of Society. Chicago: The University of Chicago Press, 1921.

Muhleman, M. L.

Monetary and Banking Systems. New York: Monetary Publishing Co., 1908.

Mumford, George S.

"Factors That Should Govern Federal Rediscount Rate." *Trust Companies.* Vol. XXXIII. No. 3. September, 1921.

Nitti, Francesco S.

* "Essai Sur Les Variations du Taux de L'Escompte." Douzième Année. 1898. pp. 369–398, and pp. 793–826. Treiziéme Année. 1899. pp. 278–320.

Norton, J. E.

* "The Bank of England and the Money Market." *Political Science Quarterly.* Vol. XXXVI. No. 3. September, 1921.

* "Bank Rate and the Money-Market in the United States." *The Economic Journal.* Vol. XXXI. No. 124. December, 1921.

Noyes, Alexander D.

"Membership and Control of the Proposed Federal Reserve Bank System." *Proceedings of the Academy of Political Science in the City of New York.* Vol. IV. No. 1. October, 1913.

Owen, Robert L.

"The Federal Reserve Bank Bill." *Proceedings of the Academy of Political Science in the City of New York.* Vol. IV. No. 1. October, 1913.

Palgrave, R. H. Inglis

* *Bank Rate and the Money Market in England, France, Germany, Holland and Belgium 1844–1900.* New York: E. P. Dutton and Co., 1903.

A Review of the "Bank of England" by W. R. Lawson. *The Economic Journal.* Vol. XVI. December, 1906. Pp. 578–581.

The History of the Separation of the Departments of the Bank of England.

National Monetary Commission. Senate Document No. 492. 61st Congress. 2nd Session. Washington: Government Printing Office, 1910.

Pantaleoni, Maffeo

Pure Economics. Translated by T. Boston Bruce. London: Macmillan and Co., 1898.

PATRON, MAURICE

* *The Bank of France in its Relation to National and International Credit.* National Monetary Commission. Senate Document No. 494. 61st Congress. 2d Session. Washington: Government Printing Office, 1910.

PATTERSON, E. M.

"Some Tendencies in the Federal Reserve System." *The Annals of the American Academy of Political and Social Science.* Vol. LXXVIII. July, 1918.

* "Expansion and Contraction under the Federal Reserve System." *The Annals of the American Academy of Political and Social Science.* Vol. XCIX. No. 188. January, 1922.

PATTERSON, R. H.

The Economy of Capital. Edinburgh and London: William Blockwood and Sons, 1865.

"On the Rate of Interest,—and the Effects of a High Bank-Rate during Commercial and Monetary Crises." *Journal of the Royal Statistical Society.* Vol. XXXIV. Part III. September, 1871.

PAYNE, WILL

"Hacking at the Federal Reserve." *The Saturday Evening Post.* December 24, 1921.

PEAKE, E. G.

* "The Relationship between the American and French Exchanges and the Rates of Interest and Discount." *Bankers' Insurance Managers' and Agents' Magazine* (London) Vol. CXII. No. 929. August, 1921.

PELL, CHARLES EDWARD

The Riddle of Unemployment and Its Solution. London: C. Palmer, 1922.

PHILLIPS, CHESTER ARTHUR

Readings in Money and Banking. New York: The Macmillan Co., 1918.

* *Bank Credit.* New York: The Macmillan Co., 1920.

"Theoretical Considerations Bearing on the Control of Bank Credit under the Operation of the Federal Reserve System." *The Annals of the American Academy of Political and Social Science.* Vol. XCIX. January, 1922.

PIGOU, A. C.

* *The Economy and Finance of the War.* London: J. M. Dent and Sons Limited, 1916.

"The Economics of the War Loan." *The Economic Journal.* Vol. XXVII. No. 105. March, 1917.

* "Inflation." *The Economic Journal.* Vol. XXVII. No. 108. December, 1917.

"The Burden of the War and Future Generations." *The Quarterly Journal of Economics.* Vol. XXXIII. No. 2. February, 1919.

Memorandum on Credit, Currency and Exchange Fluctuations. International Financial Conference. Brussels, 1920. Paper No. XIII. Printed for the League of Nations. Harrison and Sons, London, England.

"Some Problems of Foreign Exchange." *The Economic Journal.* Vol. XXX. No. 120. December, 1920.

PLATT, EDMUND

"Federal Reserve System Still on Trial." *Trust Companies.* Vol. XXXI. No. 4. October, 1920.

PLEHN, CARL C.

"Substance and Shadow in War Finance." *The American Economic Review.* Vol. VIII. No. 3. September, 1918.

Introduction to Public Finance. New York: The Macmillan Company, 1920.

PLENGE, DR. JOHANN

Von der Diskontpolitik zur Herrschaft über den Geldmarkt. Berlin: Verlag von Julius Springer, 1913.

POSCHINGER, H

Bankwesen und Bankpolitik in Preussen. Berlin: J. Springer, 1878.

POWELL, CHARLES L.

"Eligibility for Discount." *The Annals of the American Academy of Political and Social Science.* Vol. XCIX. January, 1922.

PRION, W.

* *Das Deutsche Wechseldiskontgeschäft—mit besonderer Berücksichtigung des Berliner Geldmarketes.* Leipzig: Verlag von Duncker & Humblot, 1907.

RAFFALOVICH, ARTHUR

"Les Mouvements de L'Escompte Official de la Banque d'Allemagne de 1895 A 1900." *Journal des Économistes.* 5e Série. Tome XLVIII. November, 1901. Pp. 182–197.

REED, HAROLD L.

"Credit Expansion under the Federal Reserve." *The*

American Economic Review. Vol. VIII. No. 2. June, 1918.

* *The Development of Federal Reserve Policy.* Boston and New York: Houghton Mifflin Company, 1922.

Reynolds, Arthur

"Centralization of Banking and Mobilization of Reserves." *Proceedings of the Academy of Political Science in the City of New York.* Vol. IV. No. 1. October, 1913.

"Early Functioning of the Federal Reserve System." *The Annals of the American Academy of Political and Social Science.* Vol. XCIX. No. 188. January, 1922.

Reynolds, George M.

"Rediscount Rates, Bank Rates and Business Activity." *The Annals of the American Academy of Political and Social Science.* Vol. XCIX. January, 1922.

Ricardo, David

* *High Price of Bullion—A Proof of the Depreciation of Bank Notes.* Found in "The Works of David Ricardo, Esq., M. P.," by J. R. McCulloch, Esq. London: John Murray, 1846.

Rich, John H.

"Federal Reserve System not to Blame for Inflation." *Trust Companies.* Vol. XXXI. No. 4. October, 1920.

"Relation of Rediscount and Interest Rates." *Trust Companies.* Vol. XXXIII. No. 5. November, 1921.

"Expansion and Contraction from the Federal Reserve Standpoint." *The Annals of the American Academy of Political and Social Science.* Vol. XCIX. January, 1922.

Richter, Franz

* *Studien über die Diskontpolitik der Zentral-notenbanken unter näherer Berücksichtigung der Bank von England, Bank von Frankreich, und Reichsbank.* München: J. Schweitzer Verlag, 1901.

Robbins, E. Clyde

Selected Articles on a Central Bank of the United States. Minneapolis: The H. W. Wilson Company, 1910.

Roberts, George E.

"Economic Position of the United States as Affected by Huge Gold Imports." *Trust Companies.* Vol. XXI. No. 6. December, 1915.

"Employment of Banking and Trust Company Resources in Government War Finance." *Trust Companies.* Vol. XXVI. No. 2. February, 1918.

"Production as a Remedy for Inflation." *Proceedings of the Academy of Political Science in the City of New York.* Vol. IX. No. 1. June, 1920.

Robinson, M. E.

Public Finance. London: Nisbet and Co., Ltd., 1922.

* Rosendorff, Dr. R.

"Die Gold Prämienpolitik der Banque de France und ihre deutschen Lobredner." *Jahrbücher für National Ökonomie und Statistik.* III. Folge. 21. Band. 1901.

Roussin, L. G.

"Some Aspects of War Finance." *The Economic Journal.* Vol. XXIX. No. 113. March, 1919.

Rovensky, John E.

The Acceptance as the Basis of the American Discount Market. Published by the National Bank of Commerce in the City of New York. July, 1919.

Schanz, G.

Noten-order Zettelbank. Wörterbuch der Volkswirtschaft in zwei Bänden, herausgegebenen von Prof. Dr. Ludwig Elster. Zweiter Band. Jena: Verlag von Gustav Fischer, 1898.

Schmidt, Dr. F.

"Die Abhängigkeit des Wechselkurses von Zinsgeschäften und Marktzinsdifferenz." *Schmollers Jahrbuch für Gesetzgebung, Verwaltung, und Volkswirtschaft im Deutschen Reiche.* 43 Jahrgang. 1919. Pp. 743–769.

Schmidt, Hermann

"Should the Peel Act be Modified?" *Bankers' Insurance Managers' and Agents' Magazine* (London). Vol. LXIX. No. 671. February, 1900.

A review of "Bankpolitik" by Dr. William Scharling in *The Economic Journal.* Vol. XI. March, 1901. pp. 73–75.

Scott, William A.

* "The Administration and Control of the Proposed Central Reserve Association." *The Journal of Political Economy.* Vol. XIX. No. 19. December, 1911.

Banking Reform. An address delivered before the Central Supply Association, Hotel Sherman, Chicago, February 26, 1913. Distributed by the National Citizens' League.

"Banking Reserves under the Federal Reserve Act." *The Journal of Political Economy.* Vol. XXII. No. 4. April 1914.

"Popular and Unpopular Activities of the Federal Reserve Board and the Federal Reserve Banks." *The Annals of the American Academy of Political and Social Science.* Vol. XCIX. January, 1922.

Scott, W. R.

Economic Problems of Peace after War. Cambridge: at the University Press, 1917.

Seay, George J.

The Truth about the Bank-Credit Situation. A reply to the *Manufacturers' Record.* Issued by the Federal Reserve Bank of Richmond, October 8, 1920.

The Course of The Federal Reserve Banks Before and During the Price Crisis and Readjustment. Address before the North Carolina Bankers' Convention. April 26–28, 1922. Published by the Federal Reserve Bank of Richmond, May, 1922.

Seligman, Edwin R. A.

"The Economists and the Owen-Glass Bill." *Proceedings of the Academy of Political Science in the City of New York.* Vol. IV. No. 1. October, 1913.

Fiscal Reconstruction. An article appearing in a book entitled "American Problems of Reconstruction," edited by Elisha M. Friedman.

Essays in Taxation. New York: The Macmillan Company, 1921.

Currency Inflation and Public Debts. New York: The Equitable Trust Company, 1921.

Seligman, Edwin R. A., and Haig, Robert Murray

How to Finance the War. Columbia War Papers Series I. No. 7. New York: Division of Intelligence and Publicity of Columbia University, 1917.

Seyd, Ernest

Bullion and Foreign Exchanges. London: Effingham Wilson, 1868.

"On International Coinage and the Variations of the Foreign Exchanges during Recent Years." *Journal of the Royal Statistical Society.* Vol. XXXIII. Part I. March, 1870.

Seyd, Ernst

Die Wahren Grundsätze des Banknotenwesens: der Irrthum der Peel 'schen Akte and das Verderbliche des deutschen Bank gesetzentwurfes Volkswirthschaftlich und Technisch nachgewiesen. Leipzig: Hartung und Sohn, 1875.

Shirras, G. Findlay

"Some Effects of the War on Gold and Silver." *Journal of the Royal Statistical Society.* Vol. LXXXIII. Part IV. July, 1920.

Silberling, Norman J.

* "British Financial Experience 1790–1830." *Review of Economic Statistics.* Harvard University Press. Preliminary Vol. I. October, 1919.

Simpson, Kemper

"Price Fixing and the Theory of Profit." *The Quarterly Journal of Economics.* Vol. XXXIV. No. 1. November, 1919.

Sinclair, John F.

"Why the Farmer Starves." *The Nation.* Vol. CXVI. No. 3014. April 11, 1923.

Sisson, Francis H.

"Reserve Rate is an Effect and not a Cause." *Trust Companies.* Vol. XXXIII. No. 3. September, 1921.

Sivers, Dr. V.

* "Beitrag zur Geschichte der Theorie des Dis Disconts." *Jahrbücher für Nationalökonomie and Statistik.* Neunzehnter Band. 1872.

Smith, James G.

Inter-Federal Reserve Bank Rediscounting. An unpublished thesis dated December 6, 1921, on file at the Princeton University Library, Princeton, New Jersey.

* Snyder, Carl

"The Stabilization of Gold: A Plan." *The American Economic Review.* Vol. XIII. No. 2. June, 1923.

Sprague, O. M. W.

* *History of Crises under the National Banking System.* National Monetary Commission. Senate Document No. 538. 61st Congress. 2d Session. Washington: Government Printing Office, 1910.

* *Banking Reform in the United States.* Cambridge: Harvard University Press, 1911.

"The Organization of the Federal Reserve Banks." *Proceedings of the Academy of Political Science in the City of New York.* Vol. IV. No. 1. October, 1913.

"The Federal Reserve Act of 1913." *The Quarterly Journal of Economics.* Vol. XXVIII. No. 2. February, 1914.

* "Commercial Paper and the Federal Reserve Banks."

The Journal of Political Economy. Vol. XXII. No. 5. May 1914.

* "The Crisis of 1914 in the United States." *The American Economic Review.* Vol. V. No. 3. September, 1915.

"The War and the Financial Situation in the United States." *The Quarterly Journal of Economics.* Vol. XXIX. No. 1. November, 1914.

* "The Federal Reserve Banking System in Operation." *The Quarterly Journal of Economics.* Vol. XXX. No 4. August, 1916.

"The Conscription of Income." *The Economic Journal.* Vol. XXVII. No. 105. March, 1917.

"Loans and Taxes in War Finance." *The American Economic Review.* Vol. VII. No. 1. Supplement. March. 1917.

"The Significance of the Weekly Statements of the New York Clearing House Banks and of the Federal Reserve Banks." *Bankers Statistics Corporation.* Vol. I. No. 6. Section Two. November 25, 1919.

* "The Discount Policy of the Federal Reserve Banks. *The American Economic Review.* Vol. XI. No. 1. March. 1921.

"The Efficiency of Credit." *The Annals of the American Academy of Political and Social Science.* Vol. XCIX. January, 1922.

* "Bank Management and the Business Cycle." *Harvard Business Review.* Vol. I. No. 1. October, 1922.

STAMP, SIR JOSIAH

Wealth and Taxable Capacity. London: P. S. King and Son, 1922.

STEELE, F. E.

* " 'Bank Rate': Its Effect on Market Rate and on the Prices of Goods and Securities." *Bankers' Insurance Managers' and Agents' Magazine* (London) Vol. LXXVI. No. 714. September, 1903.

STEINER, W. H.

* *The Mechanism of Commercial Credit.* New York: D. Appleton and Co., 1922.

STEWART, WALTER W.

"An Index Number of Production." *The American Economic Review.* Vol. XI. No. 1. March, 1921.

Strauss, Albert

* *The Federal Reserve System and The Foreign Exchanges,* An address delivered to the students of the Department of Economics of Princeton University on January 21, 1921. Privately printed—a copy is on file at the Princeton University Library, Princeton, New Jersey.

Struck, Prof. Dr. E.

"Studien über den englischen Geldmarkt." *Schmollers Jahrbuch für Gesetzgebung, Verwaltung, und Volkswirtschaft im deutschen Reich.* Zehnter Jahrgang. Erstes Heft. 1886. Pp. 127–148 and 375–426.

Sumner, William G.

A History of the American Currency. New York: Henry Holt and Co., 1875.

Taussig, F. W.

"Price-Fixing as seen by a Price-Fixer." *The Quarterly Journal of Economics.* Vol. XXXIII. No. 2. February, 1919.

Tippetts, Charles S.

State Banks and the Federal Reserve System. A thesis in preparation at Princeton University under the direction of Prof. E. W. Kemmerer.

Tooke, Thomas

A History of Prices and of The State of the Circulation from 1838–1847 inclusive; with a General Review of the Currency Question. London: Longman, Brown, Green, and Longmans, 1848.

Vanderlip, Frank A.

"The Rediscount Functions of the Regional Banks." *Proceedings of the Academy of Political Science in the City of New York.* Vol. IV. No. 1. October, 1913.

"Responsibility of Federal Reserve System for Inflation and High Prices." *Trust Companies.* Vol. XXX. No. 2. February, 1920.

Vanderlip, Frank A. and Williams, John H.

"The Future of Our Foreign Trade." *The Review of Economic Statistics.* Preliminary Vol. II. April, 1920.

Van Zeeland, Paul.

* La Réforme Bancaire aux États-Unis d'Amérique, 1913–1921. Bruxelles: E. Bruylant, 1922.

VIRTUE, G. O.

"Another Reason Why War Prices are High Prices." *The Quarterly Journal of Economics.* Vol. XXXIII. No. 4. August, 1919. Pp. 729–733.

WAGNER, A.

* *Disconto.* Handwörterbuch der Volkswirthschaftslehre, von Dr. H. Rentzsch. Leipzig: Verlag von Julius Klinkhardt, 1870.

System der Zettelbankpolitik, mit besonderer Rücksicht auf das geltende Richt and auf deutsche verhältnisse. Freiburg: Wagner'sche Buchhandlung, 1873.

WALKER, FRANCIS A.

Money in its Relation to Trade and Industry. New York; Henry Holt and Co., 1889.

WALL, ALEXANDER

* *Analytical Credits.* Indianapolis: The Bobbs-Merrill Company, 1921.

WARBURG, PAUL M.

* *The Discount System in Europe.* National Monetary Commission. Senate Document No. 402. 61st Congress. 2nd Session. Washington: Government Printing Office, 1910.

* "Essays on Banking Reform in the United States." *Proceedings of the Academy of Political Science in the City of New York.* Vol. IV. No. 4. July, 1914.

"Discounts, Interest Rates and Credits as Problems of the Reserve System." *The Economic World.* New Series. Vol. XI. No. 9. February 26, 1916.

"The Reserve Problem and the Future of the Federal Reserve System." *The Commercial and Financial Chronicle.* American Bankers' Convention Section. Vol. CIII. No. 2677. October 14, 1916.

"Capital Issues for State and Municipal Debts and their Relation to War Financing." *Proceedings of the Academy of Political Science in the City of New York.* Vol. VIII. No. 1. July, 1918.

"Acceptances versus Call Loans as Liquid Assets for Banks." *Trust Companies.* Vol. XXIX. No. 6. December, 1919.

"Inflation as a World Problem and our Relation Thereto." *Proceedings of the Academy of Political Science in the City of New York.* Vol. IX. No. 1. June, 1920.

Acceptances in Our Domestic and Foreign Trade. Published by the American Acceptance Council, January, 1921.

"Political Pressure and the Future of the Federal Reserve System." *The Annals of the American Academy of Political and Social Science.* Vol. XCIX. No. 188. January, 1922.

* "The Federal Reserve Banks and the Open Market for Acceptances." *Harvard Business Review.* Vol. I. No. 3. April, 1923.

WEILL, N. E.

* "History and Basis of Modern Discount Policy." *Bankers' Insurance Managers' and Agents' Magazine* (London) Vol. LXXII. September and October, 1901.

WELTON, A. D.

"The Educational Campaign for Banking Reform." *The Annals of the American Academy of Political and Social Science.* Vol. XCIX. January, 1922.

WESTERFIELD, RAY B.

* "The Reserve Situation in the Federal Reserve System." *The American Economic Review.* Vol. VII. No. 3. September, 1917.

Banking Principles and Practice. New York: The Ronald Press, 1921.

WESTON, N. A.

"The Studies of the National Monetary Commission." *The Annals of the American Academy of Political and Social Science.* Vol. XCIX. January, 1922.

WHEELER, HARRY A.

"The National Citizen's League: A Movement for a Sound Banking System." *The Annals of the American Academy of Political and Social Science.* Vol. XCIX. January, 1922.

WHITAKER, A. C.

* *Foreign Exchange.* New York and London: D. Appleton and Co., 1920.

WICKSELL, KNUT

* "Der Bankzins als Regulator der Warenpreise." *Jahrbücher für Nationalökonomie und Statistik.* III. Folge. 13, Band. 1897. Pp. 228–243.

* *Geldzins und Güterpreise.* Eine Studie über die den Tauschwert des Geldes bestimmenden Ursachen. Jena: Verlag von Gustav Fischer, 1898.

"The Influence of the Rate of Interest on Prices." *The Economic Journal.* Vol. XVIII. 1907.

WIDENMANN, HANS A.

Gold Embargoes and the Foreign Exchanges. An essay submitted in the Spring of 1919 in partial fulfillment of the requirements of the M.A. degree at Columbia University. This essay is on file at the Columbia University Library.

WILLIAMS, JOHN H.

The Rôle of Prices in the Business Cycle. *The Review of Economic Statistics.* Preliminary Vol. I. 1919. Pp. 206-210.

* "The Foreign Trade Balance of the United States since the Armistice." *The American Economic Review.* Vol. XI. No. 1. Supplement. March, 1921.

WILLIAMS, T. T.

"The Rate of Discount and the Price of Consols." *Journal of the Royal Statistical Society.* Vol. LXXV. Part IV. March, 1912.

WILLIS, H. PARKER

* "The Banking Question in Congress." *The Journal of Political Economy.* Vol. XX. No. 9. November, 1912.

"The Federal Reserve Banks." *Proceedings of the Academy of Political Science in the City of New York.* Vol. IV. No. 1. October, 1913.

* "The Federal Reserve Act." *The American Economic Review.* Vol. IV. No. 1. March, 1914.

"The Future of State Institutions under the Federal Reserve Act." *The Commercial and Financial Chronicle.* American Bankers' Convention Section Number. Vol. XCIX. No. 2574. October 24, 1914.

* "American Finance and the European War." *"The Journal of Political Economy.* Vol. XXIII. No. 2. February 1915.

The Federal Reserve. New York: Doubleday, Page and Company, 1915.

* "The First Year of the New Banking System." *Political Science Quarterly.* Vol. XXX. No. 4. December, 1915.

* "What the Federal Reserve System Has Done." *The American Economic Review.* Vol. VII. No. 2. June, 1917.

"Foreign Trade and Foreign Exchange." *Bankers Statistics Corporation.* Vol. I. No. 5. Section Two. November 18, 1919.

* "Reserves under the Federal Reserve System." *Trust Companies.* Vol. XXIX. No. 6. December, 1919.

* "The Control and Apportionment of Credit in the United States." *Bankers Statistics Corporation.* Vol. I. No. 15. Section Two. January 27, 1920.

"The Federal Reserve System and Inflation." *Proceedings of the Academy of Political Science in the City of New York.* Vol. IX. No. 1. June, 1920.

"The Federal Reserve Act in Congress." *The Annals of the American Academy of Political and Social Science.* Vol. XCIX. January, 1922.

* "The Federal Reserve System—A Retrospect of Eight Years." *Political Science Quarterly.* Vol. XXXVII. No. 4. December, 1922.

"The Probable Trend of Rate of Interest and Investment." *The American Economic Review.* Vol. XIII. Vol. 1. Supplement. March, 1923.

* *The Federal Reserve System.* Legislation, Organization and Operation. New York: The Ronald Press, 1923.

Willis, H. Parker, and Edwards, George W.

Banking and Business. New York and London: Harper and Brothers, 1922.

Withers, Hartley

The Meaning of Money. Second Edition. London: Smith, Elder & Co., 1909.

* *The English Banking System.* National Monetary Commission. Senate Document No. 492. 61st Congress. 2nd Session. Washington: Government Printing Office, 1910.

The Business of Finance. New York: E. P. Dutton & Co., 1918.

War-Time Financial Problems. New York: E. P. Dutton and Co., 1919.

Wolowski, M. L.

La Question des Banques. Paris: Librairie de Guillaumin et Cie., 1864.

Working, Holbrook

"Prices and the Quantity of Circulating Medium 1890–1921." *The Quarterly Journal of Economics.* Vol. XXXVII. No. 2. February, 1923.

Wright, Ivan

Bank Credit and Agriculture. New York: McGraw-Hill Book Company, 1922.

Young, Allyn A.

"The Trend of Prices." *The American Economic Review.* Vol. XIII. No. 1. Supplement. March, 1923.

Youngman, Anna

* "The Efficacy of Changes in the Discount Rates of the Federal Reserve Banks." *The American Economic Review.* Vol. XI. No. 3. September, 1921.

"A Popular Theory of Credit Applied to Credit Policy." *The American Economic Review.* Vol. XII. No. 3. September, 1922.

Government Reports, Documents; Periodicals and Miscellaneous

The United States

Government Documents.

American State Papers. Documents, Legislative and Executive of the Congress of the United States, from the First Session of the First to the Third Session of the Thirteenth Congress, Inclusive. Washington: Published by Gales and Seaton, 1832.

Amendments to Federal Reserve Act. House of Representatives Report No. 35. 65th Congress. 1st Session. Washington: Government Printing Office, 1917.

To Amend the Federal Reserve Act. House of Representatives Report No. 678. 66th Congress. 2d Session. Washington: Government Printing Office, 1920.

Amendments to Federal Farm Loan Act and Federal Reserve Act. Hearing before a Subcommittee of the Committee on Banking and Currency, United States Senate, Sixty-Seventh Congress, First Session on S. 2253 and S. 2263. July 18 and 19, 1921. Washington: Government Printing Office, 1921.

Amendment to Abolish Office of Comptroller of the Currency, Etc. Hearing before the Committee on Banking and Currency of the House of Representatives. Wednesday, June 1, 1921. Statement of Hon. W. P. G. Harding, Governor Federal Reserve Board. Washington: Government Printing Office, 1921.

Amendment to Federal Reserve Act. Hearing before the Committee on Banking and Currency of the House of Rep-

resentatives on S. 2263. Washington: Government Printing Office, 1922.

Agricultural Inquiry. Hearing before the Joint Commission of Agricultural Inquiry. Sixty-Seventh Congress, First Session, under Senate Concurrent Resolution 4. Volumes I, II and III. Washington: Government Printing Office, 1921 and 1922.

Banking and Currency. Senate Report 133. Parts 2 and 3. 63d Congress. 1st Session. Washington: Government Printing Office, 1913.

Changes in the Banking and Currency System of the United States. House of Representatives Report No. 69. 63d Congress. 1st Session. Washington: Government Printing Office, 1913.

Comparative Print showing H. R. 7837 as passed by the House, as passed by the Senate and as agreed to in conference. Senate Document No. 335. 63d Congress. 2d Session. Washington: Government Printing Office, 1913.

Currency Bill, comparative print showing changes suggested by modified amendment submitted to Senate by Mr. Owen, also changes suggested by amendments intended to be proposed by Mr. Hitchcock to H. R. 7837. Senate Document No. 264. 63d Congress. 2d Session. Washington: Government Printing Office, 1913.

Discount Rates of the Federal Reserve Banks 1914–1921. Washington: Government Printing Office, 1922.

Exchange Stabilization. Hearings before the Committee on Banking and Currency of the House of Representatives on Bill H. R. 8404. Washington: Government Printing Office, 1921.

Exhibits in Support of Memorandum Submitted by the Jewelers' Vigilance Committee, Inc., to Sub-Committee of the Committee on Ways and Means of the House of Representatives, in Opposition to McFadden Bill, H. R. 13 201, 66th Congress, Third Session.

Expenses of Federal Reserve Banks. 67th Congress. 1st Session. Senate Document No. 75. Washington: Government Printing Office, 1921.

Federal Reserve Board Conference. Minutes of Conference with the Federal Reserve Board of the Federal Advisory Council and the Class A Directors of the Federal Reserve Banks held in Washington, D. C. May 18, 1920. Senate

Document No. 310. 67th Congress. 4th Session. Washington: Government Printing Office, 1923.

German Bank Inquiry of 1908. Vol. I. National Monetary Commission. Senate Document No. 407. 61st Congress. 2nd Session. Washington: Government Printing Office, 1910.

Hearing before the Subcommittee of the Committee on Banking and Currency. Parts 1 to 13. Washington: Government Printing Office, 1913.

Hearings before the Committee on Banking and Currency, United States Senate, Sixty-Third Congress, First Session, on H. R. 7837 (S. 2639). Senate Document No. 232. Washington: Government Printing Office, 1913.

Hearings before the Committee on Ways and Means, House of Representatives on Tax-Exempt Securities. January 16, 18, 19 and March 7, 1922. Washington: Government Printing Office, 1922.

House Banking and Currency Bill; also Comparative Print showing the changes suggested by the amendment submitted to the Senate by Mr. Owen, also the changes suggested by the amendments intended to be proposed by Mr. Hitchcock to H. R. 7837. Senate Document No. 242. 63d Congress. 1st Session. Washington: Government Printing Office, 1913.

Interest Charges of Federal Reserve Banks. Senate Document No. 291. 67th Congress. 4th Session. Washington: Government Printing Office, 1923.

Interviews on the Banking and Currency Systems in England, Scotland, France, Germany, Switzerland and Italy. National Monetary Commission. Senate Document No. 405. 61st Congress. 2nd Session. Washington: Government Printing Office, 1910.

Location of Reserve Districts in the United States. Senate Document No. 485. 63d Congress. 2d Session. Washington: Government Printing Office, 1914.

Protection of the Gold Reserve. Hearings before the Committee on Ways and Means, House of Representatives on H. R. 13201. Washington: Government Printing Office, 1920.

Reichsbank, The, 1876–1900. National Monetary Commission. Senate Document No. 408. 61st Congress. 2nd Session. Washington: Government Printing Office, 1910.

Renewal of the Reichsbank Charter. National Monetary Commission. Senate Document No. 507. 61st Congress. 2nd Session. Washington: Government Printing Office, 1910.

Statistics for Great Britain, Germany and France 1867–1909. National Monetary Commission. 61st Congress. 2d Session. Senate Document No. 578. Washington: Government Printing Office, 1910.

Annual Reports of the Comptroller of the Currency. Washington: Government Printing Office.

Annual Reports of the Federal Reserve Board. Washington: Government Printing Office.

Annual Reports of the Secretary of the Treasury on the State of the Finances. Washington: Government Printing Office.

Report of the National Monetary Commission. Senate Document No. 243. 62nd Congress. 2d Session. Washington: Government Printing Office, 1912.

Report to the Reserve Bank Organization Committee by the Preliminary Committee on Organization. Professor Seligman. Confidential No. 243. Columbia University Library.

Report of the Joint Commission of Agricultural Inquiry. In Four Parts. Sixty-Seventh Congress. First Session. House of Representatives Report No. 408. Washington: Government Printing Office, 1922.

Reviving the Activities of the War Finance Corporation. Joint Hearings before the Committees on Agriculture and Forestry, Congress of the United States, Sixty-Sixth Congress, Third Session, on S. J. Res. 212. Parts I and II. Washington: Government Printing Office, 1920.

Rural Credits. Hearings before the Committee on Banking and Currency. United States Senate. 67th Congress. 4th Session. Washington: Government Printing Office, 1922.

Standard Silver Dollar. Hearings before the Subcommittee on Banking and Currency of the House of Representatives on H. R. 11,226. January 12, February 16 and 17, 1920. Washington: Government Printing Office, 1920.

Stabilization of Purchasing Power of Money. Hearings before the Committee on Banking and Currency of the House of Representatives. Sixty-Seventh Congress, Fourth Session, on H. R. 11,788. December 18, 19, 20 and 21, 1922. Washington: Government Printing Office, 1922.

Statistical Abstracts of the United States. Issued by the De-

partment of Commerce. Washington: Government Printing Office.

War Finance Corporation. Hearings before the Committee on Banking and Currency of the House of Representatives on Bill S. 1915. Tuesday, August 9, 1921. Washington: Government Printing Office, 1921.

Periodicals.

The Annalist. Published by the New York Times Company, New York City.

The Commercial and Financial Chronicle. Published by William B. Dana Company, New York City.

Commerce Monthly. A Journal of Commerce and Finance. Published by the National Bank of Commerce in New York City.

Congressional Record.

Economic Conditions. Government Finance, United States Securities. A monthly bulletin published by the National City Bank of New York.

The Federal Reserve Banker. Published by the National Bank News, Philadelphia, Pa.

Federal Reserve Bulletin. Issued by the Federal Reserve Board at Washington, D. C.

The Financial Review. Published by William B. Dana Company, New York City.

Monthly Labor Review. Published by the United States Department of Labor. Government Printing Office, Washington, D. C.

Monthly Review. London Joint City and Midland Bank Limited, London, England.

Monthly Review of Credit and Business Conditions, Second Federal Reserve District. Issued by the Federal Reserve Bank of New York.

Monthly Statistical Bulletin. Standard Daily Trade Service. Published by the Standard Statistics Company, New York City.

Proceedings of the Annual Conventions of the American Bankers Association.

The Review of Economic Statistics. Printed at the Harvard University Press, Cambridge, Mass.

Newspapers.

The Journal of Commerce and Commercial Bulletin (New York).
The Wall Street Journal.
New York Evening Post.
The New York Times.

Miscellaneous

Banking Inflation and Rediscount Rates. *The Journal of Political Economy.* Vol XXVII. No. 9. November, 1919. Pp. 789–799.

Banking Problems. *The Annals of the American Academy of Political and Social Science.* Vol XXXVI. No. 3. November, 1910.

Business Cycles and Unemployment. New York: McGraw-Hill Book Company, 1923.

Commercial Banking Practice under the Federal Reserve Act. Published by the National Bank of Commerce in New York Revised to October, 1921.

Copy of Letter from the Federal Reserve Board to the Chairman of the Committee on Banking and Currency, United States Senate, Relating to a bill to fix the maximum discount rate of Federal Reserve Banks. Published by the Federal Reserve Bank of Richmond, 1920.

The Curtailment of Credit. *The Journal of Political Economy.* Vol. XXVII. No. 10. December, 1919. Pp. 889–890.

Deflation against Business Prosperity. Continental Trust Company. Atlanta, Georgia, March 14, 1921.

Editorial. *The American Banker.* Vol. LXXX. No. 5. January 30, 1915. P. 342.

Editorial. *The Bankers Magazine* (New York) April, 1916. Pp. 474–477.

End of Government Price-Fixing. *The Journal of Political Economy.* Vol. XXVII. No. 6. June, 1919.

The Federal Reserve Bank and the Farmer and Stockman. Published by the Federal Reserve Bank of Minneapolis, February 10, 1921.

Letters to College Classes in Economics and Banking Discussing the Practical Operations of the Federal Reserve System. Issued by Federal Reserve Bank of Richmond, during 1921, 1922 and 1923.

Our Vanishing Gold Reserve. A pamphlet printed by the American Mining Congress, Washington, D. C.

A *Profitable Privilege.* A pamphlet issued by the Federal Reserve Bank of Cleveland, Cleveland, Ohio.

Reply of the Federal Reserve Board to a Letter from Senator Robert L. Owen Criticising Certain Policies of the Federal Reserve System. Published by the Federal Reserve Bank of Richmond, Richmond, Virginia. December, 1920.

Report of the Monetary Commission of the Indianapolis Convention. Chicago: The University of Chicago Press, 1898.

Report of Conference held under the auspices of the Oregon Bankers Association in Portland, Oregon, September 5, 1918, to consider the gold problem.

Report of the Committee on War Finance of the American Economic Association. *The American Economic Review.* Vol. IX. No. 1. Supplement No. 2. March, 1919.

Restoration of the Free Movement of Silver. *The Journal of Political Economy.* Vol. XXVII. No. 6. June, 1919 Pp. 506–507.

Suspension of Exchange "Pegging." *The Journal of Political Economy.* Vol. XXVII. No. 5. May, 1919. Pp. 408–409.

War Finance Primer. Issued by the National Bank of Commerce in New York City. May, 1917.

THE UNITED KINGDOM.

Government Documents.

International Financial Conference. Brussels, 1920. Proceedings of the Conference. London: Harrison and Sons, Ltd., 1920.

Memorandum on Currency 1913–1921. League of Nations. Geneva, 1922.

Report together with Minutes of Evidence, and Accounts, from the Select Committee on the High Price of Gold Bullion. London: Richard Taylor and Co., 1810.

Report from the Committee of Secrecy on the Bank of England Charter. *Ordered by,* the House of Commons, *to be Printed.* 11 August 1832.

Report from the Select Committee on the Banks of Issue. Ordered, by the House of Commons, to be Printed. 7 August 1840.

Report, First, From the Secret Committee on Commercial Distress; with the Minutes of Evidence. [House of Commons Report]. Ordered, by the House of Commons, to be Printed. 8 June 1848.

Report from the Secret Committee of the House of Lords, together with the Minutes of Evidence, and an Appendix. Ordered, by the House of Commons, to be Printed. 28 July 1848. (Reprinted, 1857)

Report from the Select Committee on Bank Acts; Together with the Proceedings of the Committee, Minutes of Evidence, Appendix and Index. Ordered, by the House of Commons, to be Printed. 30 July 1857.

Report from the Select Committee on Banks of Issue together with the Proceedings of the Committee, Minutes of Evidence, and Appendix. Ordered, by the House of Commons, to be Printed. 22 July 1875.

Report of the Gold Production Committee. Presented to Parliament by Command of His Majesty. London: Published by His Majesty's Stationery Office, 1918.

First Interim Report of the Committee on Currency and Foreign Exchanges after the War. Presented to Parliament by Command of His Majesty. London: Published by His Majesty's Stationery Office, 1918.

Final Report of the Committee on Currency and Foreign Exchanges after the War. Presented to Parliament by Command of His Majesty. London: Printed and published by His Majesty's Stationery Office, 1919.

Periodicals.

The Economist.

The Statist.

Miscellaneous.

The British Banking Reform League. A Criticism of the First Interim Report of the Committee on Currency and Foreign Exchanges, by Arthur Kitson, President of the British Banking Reform League, January 11, 1919.

Editorial, "Variations in the Rate Charged by the Bank of France from 1844 to 1899." *The Bankers' Insurance Managers' and Agents' Magazine* (London). Vol. LXX. No. 677. August, 1900.

Editorial, "The Bank Reserve and the Rate of Discount." *The Bankers' Insurance Managers' and Agents' Magazine* (London). Vol. LXXVI. No. 715. October, 1903.

Editorials, "The Bank of England and the Money Market." *The Bankers' Insurance Managers' and Agents' Magazine* (London). Vol. LXXXI. March, April and July 1906. Vol LXXXII. September, 1906.

GERMANY

Government Documents

Reichsbank, Die, 1876 bis 1910. Organisation und Geschäftsverkehr statistisch dargestellt. Berlin: 1912.

Statistisches Jahrbuch für das Deutsche Reich. Verlag für Politik und Wirtschaft.

Periodicals.

Volks wirtschaftliche Cronik.
Jena: Verlag von Gustav Fischer.

FRANCE

Government Documents

Annuaire Statisque—Statisque Général de la France. Imprimérie Nationale.

Periodicals.

L'Économiste Français

Miscellaneous.

Annuaire de L'Économie Politique et de la Statisque.

JAPAN

Government Documents

Annual Reports of the Bank of Japan.

Résumé Statistique de L'Empire du Japon. Département Impérial de Recensement. 36e Année. 11e Année de Taisho, 1922.

CANADA

Government Documents

The Canada Year Book. Dominion Bureau of Statistics.

APPENDIX B

Containing an abstract of
The Baltimore Plan
Carlisle's Plan
The Plan of the Indianapolis
Monetary Commission
The Aldrich Bill of January 7th, 1908
The Fowler Bill of January 8th, 1908
The Vreeland Bill of May 14, 1908
The Aldrich-Vreeland Act

THE BALTIMORE PLAN

National banks were to be allowed to issue notes up to 50% of their paid-up unimpaired capital subject to a tax of ½ of 1% per annum on the average amount of notes outstanding; and an additional circulation, known as "Emergency Circulation" up to 25% of their paid-up unimpaired capital subject to a heavier tax.

The present tax of 1% per annum levied upon the average amount of circulation outstanding was to be continued and to be paid to the Treasurer of the United States, from which the expenses of the office of the Comptroller of the Currency, of the printing of notes, etc., should be defrayed.

The banks issuing notes were to continue to deposit and maintain with the Treasurer of the United States a "Redemption Fund" equal to 5% of their

CARLISLE'S PLAN

National banks were to be allowed to issue notes up to 75% of their paid-up unimpaired capital, provided, that before a bank received any notes, it deposited United States legal tender notes, including notes of 1890, to the amount of 30% of its notes in circulation in a Guarantee Fund.[a] The notes so issued were to constitute a first lien on the assets of insolvent banks.

A tax of ½ of 1% per annum was to be levied on the average amount of notes outstanding to defray expenses incidental in printing the notes, official supervision, cancellation, etc.

[a] Secretary Carlisle computed that if all National and state banks took out circulation to the full amount authorized, the guarantee and safety funds would absorb $228,500,000 of legal tender notes; which, he felt would go a long ways toward protecting the Government from repeated presentations of notes for redemption. *Finance Report,* 1894, p. LXXVIII.

average outstanding circulation.

A "Guarantee Fund" was to be created through the deposit by each bank of an amount equal to 2% of the circulation received the first year.

Thereafter, a tax of ½ of 1% per annum was to be imposed upon the average yearly amount of circulation until the Guarantee Fund equaled 5% of the entire outstanding circulation. The notes of insolvent banks were to be redeemed by the Treasurer of the United States out of the Guarantee Fund, if sufficient, and if not sufficient out of any money in the Treasury; the same to be reimbursed to the Treasury out of the Guarantee Fund when replenished from the assets of the insolvent banks or by the aforementioned tax.

The Government was to have a prior lien upon the assets of each insolvent bank and upon the liability of the shareholders for the purpose of restoring the amount withdrawn from the Guarantee Fund for the redemption of its circulation.

No national bank note was to be of a smaller denomination than ten dollars, and all notes of the same denomination were to be uniform in design.

A safety fund was to be provided to facilitate the immediate redemption of the notes of insolvent banks, by imposing a tax of ½ of 1% per annum on the average circulation of each bank until the fund should amount to 5% of the total circulation outstanding. In case of the failure of the bank its guarantee fund was to be paid into the safety fund and used for the redemption of its notes. In case the fund became impaired by reason of the redemption of notes of insolvent banks, it should at once be made good by pro-rata assessments upon the other banks according to the amounts of their outstanding circulation; but there should be a first lien on the assets of the insolvent banks to reimburse the contributing banks. The safety fund might be invested in United States Bonds, having the longest time to run, the bonds and interest upon them to be held as part of the fund.

The provisions in the National Banking Act requiring banks to maintain a reserve against deposits were to be repealed.

Notes issued by state banks were to be exempt from the tax of 10% provided for in the Act of March 3, 1865, if the Secretary of the Treasury and the

Comptroller of the Currency were satisfied that

a. Such a bank at no time had outstanding circulating notes in excess of 75% of its paid-up, unimpaired capital.

b. The stockholders were individually liable for the redemption of its notes to the full extent of their ownership of stock.

c. The notes were a first lien on the assets of the bank.

d. The bank had at all times kept a guarantee fund in United States legal tender notes, including notes of 1890, equal to 30% of its outstanding circulating notes.

e. The bank promptly redeemed its notes on demand.

PLAN OF THE INDIANAPOLIS MONETARY COMMISSION

The existing gold standard was to be maintained, and all obligations of the United States were to be redeemed in the same. No silver dollars were to be coined henceforth.

A Division of Issue and Redemption was to be created in the Treasury Department which should have control of the guaranty and redemption funds of national banks, and of all funds held against the demand obligations of the Treasury Department. Further, the Secretary of the Treasury was authorized to sell bonds to build up the redemption fund when depleted.

National banks were to be permitted to issue notes to an amount not to exceed their paid-up unimpaired capital, exclusive of so much as was invested in real estate. Such notes were to constitute a first lien on the issuing bank. For the first five years after the passage of the act, the notes issued up to 25% of the bank's capital were to be secured by United States government bonds deposited with the Treasurer of the United States, but thereafter the amount of bonds required to be deposited before notes might be issued was to be reduced by one-fifth each year.

Each national bank was to pay a tax at the rate of 2% per annum upon the amount of its circulating notes in excess of 60% and not

in excess of 80% of its capital, and a tax at the rate of 6% per annum upon the amount of its notes outstanding in excess of 80% of its capital.

A guaranty fund equal in amount to 5% of the notes in circulation was provided to redeem the notes of insolvent banks. If this fund should become impaired, the Comptroller of the Currency was authorized to make an assessment on all banks to replete the fund. Any portion of the fund might be invested in United States bonds.

The 5% gold redemption fund was to continue.

The existing reserve requirements were maintained, but it was provided that one-quarter of the reserves of all national banks was to be in the form of coin. Neither the redemption nor guaranty funds were to count as part of the required reserves.

The organization of national banks with a capital of $25,000, in places of 4000 or less was provided for.

Provision was made for the establishment of branch banks, whenever the Comptroller of the Currency should permit.

THE FOWLER BILL

Introduced into the House January 8, 1908. H. R. 12,677—60th Congress, First Session, House Report No. 1126, p. 81–87.

Upon the passage of the act, the Comptroller of the Currency was to designate twenty cities in the United States for the location of bank redemption agencies.

Unless located in a redemption city, every national bank was to make arrangements with a national bank located in a redemption city for the redemption of its bank notes in gold coin or other lawful money.

Upon the completion of the organization of the bank note redemption districts, any national bank might retire all or any part of its present bond-secured circulation by depositing with the

THE ALDRICH BILL

Introduced in the Senate January 7, 1908. S. 3023—60th Congress, First Session, Congressional Record, Vol. 42, p. 504.

Any national bank which had circulating notes secured by the deposit of United States bonds, to an amount not less than 50% of its capital stock and which had a surplus of not less than 20%, might make application to the Comptroller of the Currency for authority to issue additional notes to be secured by the deposit of bonds other than bonds of the United States.

Upon receiving the approval of the Comptroller of the Currency, a national bank, by depositing certain specified bonds, might receive circulating notes up to 75% of the market value of these bonds, provided that the

United States Treasurer an amount of the present bond-secured notes or of lawful money or of both equal to the amount of its circulation so retired; and might issue bank notes up to its paid-up unimpaired capital without depositing bonds. National banks issuing such credit notes were to deposit in gold coin or lawful money with the Treasurer of the United States an amount of money equal to 5% of their average deposits during the preceding six months and in addition an amount equal to 5% of the notes they proposed to circulate. These notes were to be taxed at the rate of 2% per annum.

The Guarantee Fund, including the 5% of all deposits, the 5% of all note issues and the 2% paid as a tax, was to be employed to guarantee:

a. the payment of all bank deposits.

b. the payment of all bank notes, and of all the expenses incurred in conducting and maintaining the bank note redemption agencies. It was provided that the Comptroller of the Currency was to have charge of the Guarantee Fund.

National banks located in a central reserve city, or in a reserve city were to maintain in lawful money amounts equal to at least 25% of their national bank notes, and every other national bank was to maintain a reserve of 15% against its notes. total circulation of the national bank did not exceed its unimpaired capital and surplus, and provided that there were not outstanding under this act circulating notes to an amount greater than $250,000,000.

The securities acceptable for the additional notes included the bonds of any state of the United States; or of any county or municipality which had been in existence for fifteen years, and which during the past ten years had not defaulted in the payment of any part of either principal or interest on its funded debt, and which had 20,000 inhabitants and whose net indebtedness did not exceed 10% of the valuation of the taxable property; or the first mortgage bonds of any railroad company (excluding tramways) which had paid dividends of not less than 4% per annum during the past five years on its entire capital.

National bank notes issued on bonds other than the United States were to be taxed monthly at the rate of ½ of 1%.

National banks located outside of reserve and central reserve cities were henceforth to keep two-thirds of their required reserves in lawful money instead of two-fifths.

However, it was provided that the national banks in reserve cities might keep three-tenths of their required reserves as cash deposits in a central reserve city, and that national banks situated outside of a central reserve city or a reserve city might keep four-fifteenths of their reserve as cash deposits in a reserve or central reserve city.

The amount national banks had on deposit with the United States Treasurer was to count as part of their required reserve.

In case of a bank failure, one-fourth of the loss resulting therefrom was to be borne by banks of the bank-note redemption district to which the insolvent bank belonged and three-fourths by the Guarantee Fund.

THE VREELAND BILL

Introduced in the House May 14, 1908. H. R. 21,871. 60th Congress, 1st Session. Congressional Record, Vol. 42, p. 6249.

National banks having an unimpaired capital and surplus of not less than 20%, were to be allowed to form voluntary associations, composed of not less than ten banks, with an aggregate capital and surplus of at least five millions of dollars.

Only one association might be formed in any one town, and a national bank could belong to only one such association.

A national bank, belonging to such an association, which had

THE ALDRICH-VREELAND ACT

Enacted May 30, 1908. Congressional Record, Vol. 42, p. 7043.

National banks with an unimpaired capital and a surplus of not less than 20%, might form voluntary associations of not less than ten banks with an aggregate capital and surplus of at least five millions of dollars. Only one such association might be formed in any one town, and a national bank might belong to only one such association.

Any bank belonging to one of these National Currency Associations, having circulating notes

INDEX

Acceptances (see bankers' acceptances and trade acceptances)

Advances to member banks, definition of by Federal Reserve Board, 158; rates charged on, 214-215; statistics of before April 1917, 214; during war period, 294-295; from 1919-1920, 326-328; from 1921-1923, 419-421

Agriculturalists, pre-war discount policy of Federal Reserve System aided, 245

Agricultural Credits Act of March 4, 1923, changes made by in Reserve Act, 142-145; provisions of, 500-502

Agricultural depression, 1920, reasons for, 385-386

Agricultural paper, attitude of Federal Reserve System on, 217-218; criticism of rates charged by Federal Reserve Banks before April 1917 for rediscounts of, 217; definition of by Federal Reserve Board, 156-157; discounts of before April 1917, 215-216; eligibility of as affected by Agricultural Credits Act of March 4, 1923, 143-145; limit on amount maturing from 6-9 mos. eligible for rediscount by a Federal Reserve Bank, 157; rates at Federal Reserve Banks on before Apr., 1917, 216-217; during war period, 287; from 1919-1920, 323; from 1921-1924, 390

Aldrich Bill of 1908, abstract of, 581-583; discussion of, 104

Aldrich Plan, ability of to exercise credit control, 120-122; acceptance provisions of, 117-118 analysis of, 106-107; in emergencies, 122; not copied in Glass Bill, 110-111; open-market powers of, 120; provided for Lombard loans, 114-115

Aldrich Plan (*continued*)

Aldrich-Vreeland Act, defects in, 105; discussion of, 103-106; provisions of, 583-585

Armistice, business recession following, 314-315

Autumnal pressure in England, 92

Bagehot, Walter, policy central banks should adopt in panics, 88

Baltimore plan, abstract of, 578-580; discussion of, 101-102

Bank deposits, increase in 1913-1917, 194-195; time deposits as an element in inflation, 193, note ♯ 45

Bank notes, of central banks, redemption solely at main office to prevent gold exports, 71-72

Bank of England, abandons policy of rationing credit in crisis of 1825, 14; act of 1833, 15; aided by other central banks in crises, 79-80; alterations in Bank rates, 45-46; arithmetic mean of official discount rates, 40; Bank and market rates during war, 281; Bank rate, changes in in 1919-20 compared with changes in Bank rate at Federal Reserve Bank of New York, 324-325; Bank rate, remedies proposed to lessen variations in, 78-79; borrows from Bank of France, 1839, 18; character of paper discounted by, 32; credit policy of in 1846, 23; criticism of policy in crisis of 1847, 24; depreciation of notes after 1809, reasons for, 6; discount policy after pas-

Bank of England (*continued*)
sage of Peel Act, 22-23; discount policy during crisis of 1857, 27-28; effect of attempts to map up surplus funds in market, 60, note ♯97; effect of Bank rate in crisis of 1866, 57, note ♯83; effect of inelasticity of notes 77, note ♯165; effect on Bank rate of England's position as short-term international creditor, 56-57; effect on reserve of policy forcing bank to purchase standard gold, 78, note ♯168; establishes branch at Ottawa Canada, 1914, 178; exportation of bullion, 1846, 23; explanation of officials for depreciation of Bank notes, after 1809, 10; important to hold foreign bills, 79, note ♯173; inquiry of 1819, 11; intention of framers of Act to obtain elasticity in notes through issue against securities, 77, note ♯166; lack of stability in Bank rate, 77; latitude allowed by law in discount policy, 33; interest-free advances on gold imports at, 65-66; internal drain, 1847, 25-26; lessons learned in discount policy between 1797-1857, 29; lessons of the crisis of 1847, 27; Lombard loans, 32-33; liberality during crisis of 1825, 14; meaning of Bank rate, 31-32; maximum and minimum Bank notes at since 1844, 44-45; mechanics of fixing Bank rate, 31; method used to mop up funds in market, 60-61; moderate issues of from 1797-1809, 5; notes of, did not depreciate materially from 1802-1809, 4; partial resumption of space payments, 1816, 11; Peel Act, 21-22; Peel's resumption act, 11; policy during crisis of 1825, 12-14; policy in crisis of 1836, 16; policy during crisis of 1839, 17-18; policy during crisis of 1839, comment on, 18; policy during crisis of 1857, Mill's comment on, 28-29; private discount rate at, 62; rationing of credit in crisis of 1825, 13; reasons for lack of stability in Bank rate, 77-78; report of Lords Committee on rationing of credit during crisis of 1847, 24-25; resumption of specie payments in 1821, 11; seasonal drains, 88-92; suspension of Peel Act, 1847, 26; suspension of specie payments, 1797, reasons for, 2-3; unliquid condition, in 1797, 3

Bank of France, alterations of Bank rate in, 45-46; arithmetic mean of official discount rates, 40; average yield on bills of exchange discounted by, 41; before 1857 could not raise discount rate above 5%, 34; definition of eligible paper, 35-36; description of passive gold premium policy, 67-68; disadvantage of passive gold premium policy, 69-70; interest-free advances on gold imports, 66; Lombard loans, 36; maximum and minimum Bank rates at since 1844, 44-45; mechanics of changing Bank rate, 33-34; passive gold premium policy, reasons for adoption, 70-71; seasonal variations in note circulation, Bank and market rates, 94-96

Bank rate, consequences of rise in, 52-54; effect of on market rates, 58, note ♯90; factors determining effectiveness of, 54-56; fluctuations in reserve percentages not sole reason for changes in, 48-49; importance of stability in, 76-77; in Japan, 383, ineffective unless controls market, 57; influence of foreign drains on, 49-50; influence on market rates, 400-402; previous influence in Europe, 58-59; private discount rate, description of

Bank Rate (*continued*)
61-62; private discount rate, reasons for, 61-62; reasons for fluctuations in, 46-47; reasons for lessened influence in Europe, 58-59; substitutes for elevations of, 65; and foreign drains, 49-52; and market rate, 83-86, and price cycle, relationship of, 82-83; and seasonal variations, 88-96; and speculation, 80-88; of Federal Reserve Banks (see Federal Reserve Banks)
Bankers' acceptances (see, also, Federal Reserve Act, Federal Reserve Banks); abuse in acceptance practice before April 1917, 238-240; abuses of later, 442-449; amendment of March 3, 1915, 141; amendment to Federal Reserve Act of September 7, 1916, governing, 160-162; amendments to Federal Reserve Act loosened up acceptance credits, 164; classified by originating transactions, 1919, 329, 1920-1923, 441-442; development after war of a mushroom character, 451; dollar exchange, rediscount requirements of, 166; domestic acceptances not needed, 119; earnings on 1920-1923, 441; growth of dollar draft in 1915-1917, 237; inter-district purchases of in war period, 300-301; maturities of those purchased in 1915-1916, 236; maturities of purchases of in 1920-1923, 440; obstacles in way of developing use of in the United States, 233-234; obstacles in way of wide use in America after armistice, 449-450; policy of Reserve Banks toward in war period, 300; provision of original Federal Reserve Act regarding, 159-160; provisions in Federal Reserve Act as amended on March 3, 1915, 160; provisions in Federal Reserve Act allowing domestic bankers' acceptances should be repealed, 512; purchases by Federal Reserve Banks in 1915 and 1916, statistics of, 235-236; purchased by Federal Reserve Banks, Jan. 1919-May 1920, statistics of, 329-330; purchases by Federal Reserve Banks in 1919, criticised, 380; purchases by Federal Reserve Banks 1920-1923, 438-439; purchased by members and non-member banks on specified dates in 1915 and 1916, 237; purchases of from member and non-member banks after armistice, 441; reasons for limiting use of, 118; rediscounted acceptances not to run longer than underlying transactions, 166-167; regulations of Board governing purchases in open-market by Federal Reserve Banks, 169-171; requirements for rediscounting, 165-166; statistics of amount outstanding, 451; theory of, 238-239, and 442; uniform policies needed in purchase of, by Federal Reserve Banks, 241
Bankers and Trade Acceptances, maturities of purchases of in 1919, 329
Banking principle, analysis of, 20-21
Bill of Exchange, definition of by Federal Reserve Board, 155
Bonds, Government, Federal Reserve Banks must use discretion in buying, 232-233; investments in by Federal Reserve Banks before April 1917, 232; purchase fund, 293
Borrow and buy programme of, during war, 292-293
Brookhart, Sen., and Federal Reserve System in Iowa, 475
Bullion Committee, acceptance of conclusions by officials of Bank of England in 1819, 11; analysis of report, 8-9; appointed by House of Commons, 7; report of

Bullion Committee (*continued*)
rejected by House of Commons, 10
Business Activity and Federal Reserve Bank rates, 529
Business conditions in 1919, 315-317
Business cycle, analysis of, 81, power of central bank to control 81-82, 85-87
Business depression and Federal Reserve Banks, 536
Business recession following the armistice, 314-315

Call loan rates and Federal Reserve System, 482-483
Capital, export of from the United States 1914-1917, 187-188
Capital Issues Committee of Federal Reserve Board, details of administration and organization, 307-308
Capital Issues Committee of War Finance Corporation, discussion of, 308-309; life should have been prolonged, 310
Capital Issues Committees of Federal Reserve Board and War Finance Corporation, work valuated, 309-310
Carlisle's Plan, abstract of, 578-580; discussion of, 102
Cash discount against trade acceptances, 226-227
Cassel, Gustav, an efficacy of Federal Reserve Bank rate, 400; on reason for price increases, 337; on weak discount policy of Federal Reserve Banks in 1919, 321, note ‡ 35
Central banks, discount policy of during crisis as indicated by Walter Bagehot, 87-88; discount policy of during seasonal drains, 94-96; discount policy of in crisis, 86-88; importance of fiscal functions of, 249-250; miscellaneous methods used to protect reserves, 80, note ‡ 178; type of paper should discount, 114
Certificates of Indebtedness, amount purchased before armistice by banks, 289-290; employment of in World War, 288-289; method of sale created fiat credit, 290; method used in payment for by credit, 289; rates of issue of, 278-279; use in previous wars, 288
Circular Letter No. 13, abandoned, 152; contents of, 151-152; credit policies of, 199-200
Collateral demanded by Federal Reserve Banks, 477-479
Comptroller of Currency examiners report on abuses of bankers' acceptances, 44 ff
Commercial and Financial Chronicle, on Federal Reserve rates and inflation, 342-343
Commercial paper, Federal Reserve Banks should be allowed to buy, 512; preferential bank rates on paper of shorter maturities, 204; scrutiny of by Federal Reserve Banks and price cycle, 533-534; not sufficiently scrutinized by Federal Reserve Banks before April 1917, 245-246; type which should be discounted by a central bank, 114
Committee of Secrecy on the Bank of England charter, 1832, questions investigated by, 15, note ‡ 44
Commodity paper, reasons for small amount discounted, 221-222; statistics of discounts of at Federal Reserve Banks, 221
Commodity paper rates, harm done by, 222; in effect at Reserve Banks, 220; reasons given for establishment of, 218
Circulating media, increase in, 1913-1917, 194-195
Cotton declared a contraband of war, 218-219; demoralization of industry in 1914, 179; price of middling-uplands, New York 1915-1916, 279 note ‡ 110

Cotton-loan fund, details of plan, 180; service of, 181
Credit, increase in in 1919 due to Government's financial operations, 317-318; rationing of, policy of Federal Reserve Board towards, 1919-1920, 359-360; rationing of, theory of, 13; rationing of on New York Stock Exchange, purpose of during war, 305
Credit and prices, Federal Reserve Board's explanation of, 343-348
Credits, frozen, 386; commercial, control of during war period, 310-312; commercial, difficulty of controlling, 311-312; investment, rationing of in war period, 307-310; non-essential, curtailment of by Federal Reserve Banks in 1919, 356-358
Credit control, diffused character of banking system in the United States prevented credit control, 99-100; idea of non-existent in the United States before Federal Reserve Act, 99; measures taken by Federal Reserve Bank in 1919-1920 to control, 351-352; non-existent under National Banking System, 100-101; use of in speculation in 1918, 306
Crisis, policy Federal Reserve Banks should follow during, 535-536; policy of central banks in, 86-88; of 1825 in England, 12; of 1825, credit-rationing policy of Bank of England, abandoned, 14; of 1825, liberality of Bank of England, 14; of 1825, policy of Bank of England, 12-13; of 1825, rationing of credit by Bank of England, 13; of 1836, policy of Bank of England, 16; of 1839, policy of Bank of England, 17-18; of 1839, reasons for, 17; of 1847, England, first phase of, 24; of 1847, internal drain in fall, 25-26; of 1847, lessons to be derived from, 27; of 1847, Lords Committee Report
Crisis (*continued*)
on rationing of credit, 24-25; of 1847, speculation in food-stuffs, 25; of 1857, discount policy of Bank of England, 27-28; of 1907, chief events in, 388; of 1907, interest notes in, 181; of 1914, interest rates during, 181; of 1914, reason did not degenerate into a panic, 181; of 1920 failures, statistics of, 387; Japanese, of 1920, 381-384; of 1920-1921, chief events in, 388; of 1920-21, discount operations of Federal Reserve Banks during, 411-412
Crissinger, suggestion regarding rediscounts of member banks, 513-514
Cunliffe Committee, Bank rate and prices, explanation of relation of, 525-526; theory of prices of, 343, note ♯77
Cunliffe report, quoted, 54-55, note ♯78
Currency principle, analysis of, 19; criticism of, 19-20

Davenport, H. J., on efficacy of Bank rate, 467
Deflation, Federal Reserve Board converted to policy of, 348-351; in May 1920, 381; orderly, policy of Federal Reserve Board towards, in 1919, 358-359; discussion of, 460-461; policies of Federal Reserve System in deflation period, criticism of, 505-507; and Republican party, 473
Deposit rate agreement, 365-366
Deposits, bank, increase in, 1913-1917, 194-195; in United States, ratio of to money in circulation, 135-136
Discount market, development encouraged by Reserve Banks, 234-235; functions of, 115-116; obstacles in way of development of in the United States, 233-234; prerequisites of development of one in the United States, 116-117; 159; conclusions

Discount Market (*continued*)
to be drawn from experience of European central banks, 96-98; functions of, were recognized in fundamentals by 1821, 12; of central banks and seasonal drains, 94-96; of Federal Reserve Banks, pre-war, formulation of, 197-198; origin of, 2; meaning of the term, 2
Dollar exchange, not depreciated by reason of pegging of sterling, 270, note ♯61; purpose of explained 162, note ♯53; rediscount requirements, 166
Draft, definition of by Federal Reserve Board, 155
Drain, foreign, see foreign drain

Edge, Senator, on dirt farmer amendment, 498
Eligible paper, agricultural paper, definition of by Federal Reserve Board, 156-157; agricultural paper, limit on 6-9 months, maturing, eligible for rediscount, 157; at Reserve Banks, test of liquidity of, 208; circular letter No. 13, contents of, 151-152; classification of at Federal Reserve Bank of Boston, January 1, 1917, 205; draft, bill of exchange, and trade acceptance definition of by Federal Reserve Board, 155; sight drafts secured by bills of lading, 157; importance of, 137, note ♯14; problems Board faced in defining, 150; promissory notes, definition of by Federal Reserve Board, 155; relaxation in requirements during war period, 298; simplification of classification by Federal Reserve Board in 1917, 205; under Federal Reserve Act, 140-141
England, deficient harvests of 1846, 23; improvement in economic conditions in 1837 and 1838, 17; influence of Bank rate in crisis of 1866, 57, note ♯83; internal
England (*continued*)
drain of 1847, 25-26; market rate defined, 57, note ♯84; moratorium in Great War, 56, note ♯79; only free gold market of world after 1821, 30; parliamentary inquiry of 1840, 18; short-term international creditor, effect of on Bank rate, 56-57; speculation in food-stuffs, 1847, 25; speculative tendencies from 1834-1836, 16; suspension of specie payments, 1797, reasons for, 2-3
Exchange agreements entered into by United States during war, 271, note ♯62
Expansibility of banking system, after amendment of June 21, 1917, 259-261; before amendment of June 21, 1917, 257-259

Federal Advisory Council and Bank rate, 132-133
Federal Intermediate Credit Banks, discounts for by Federal Reserve Banks, 157
Federal Reserve Act, amendment of March 3, 1915, governing bankers' acceptances, 160; amendment of September 7, 1916, governing bankers' acceptances, 160-162; amendments suggested by critics, 485, note ♯179; as amended by Agricultural Credits Act of March 4, 1923, 142-145; as amended by War Finance Corporation Act, 147-148; Bank rate, provision governing, 130; bankers' acceptances, amendments to Act loosened up credit, 164; bankers' acceptances as governed in original act, 159-160; provisions allowing domestic bankers' acceptances should be repealed, 512; changes in suggested by critics, 485-502; changes made by Agricultural Credits Act, 500-502; commercial paper, Federal Reserve Banks should be allowed to buy, 512; dirt farmer

Federal Reserve Act (*continued*)
amendment, 494-499; discount provisions analysed, 173-175; eligible paper under, 140-141; Federal Reserve Board, suggested changes in, 513; interdistrict rediscounting, provisions governing, 148-149; member bank as agent, 147; open-market powers of original act, 167-168; open-market provisions as altered by Agricultural Credits Act of March 4, 1923, 169; progressive rates of discount should be allowed, 512; rediscounts for member state banks, 145-146; rediscounts of war paper, 146-147; reserves against notes and deposits, suggested changes in, 512-513; section 13, amendments to, 141-145; section 13, analysis of, 140-141; section 13 as originally passed, 138-139
Federal Reserve Banks, advances, rates charged on, before April 1917, 214-215, advances, statistics of, pre-war, 214; during war period, 294-295; from 1919-1920, 326-328; from 1921-1923, 419-421
Federal Reserve Banks, agricultural paper, attitude on, 217-218; criticism of before April 1917, rates charged on by Federal Reserve Banks, 217; rates on before April 1917, 216-217; rules governing discounting of by Federal Reserve Banks, 215-216; statistics of rediscounts of before April 1917, 215-216; during war period, 294-295; from 1919-1920, 327-328; 1921-1922, 419-421
Federal Reserve Banks, appointed fiscal agents of Government, 250-251
Federal Reserve Banks, bankers' acceptances, attitude towards, 234-235
Federal Reserve Banks, averted panic in 1920, 386-387
Federal Reserve Banks, bank rate
Federal Reserve Banks (*continued*)
as controlled by economic and political conditions abroad, 529; average charged on discounted paper in 1919 by months, 330; average charged on purchased paper in 1919 by months, 330; below market in 1919-1920, 324; below market in deflation period, 392-394; changes of in deflation period, analysis of, 403 ff; course of during war, 283-4; criticism of equalization of pre-war, 206-207; discrepancies in in 1920, 377; effect of establishing pre-war above market, 202; efficacy of, 455-471; established in pre-war above market rates in financial centers, 202-203; established on trade acceptances in 1916 and 1917, 224-225; factors determining changes in, 517-518; fixing of at opening of Federal Reserve Banks, 201-202; bank rates in effect on April 30, 1917, 206; in war below market rate, 279-281; increases in in 1920, 367; in lending and borrowing districts, 435-436; objects Federal Reserve Board wished to attain by raising, 367; obstacles in way of raising in 1919, 364-366; policy followed during war of in fixing, 284, 287; raising of in 1919 not a sudden act, 366; policies which should govern in fixing, 530-532; preferential, on trade acceptances not waranted, 227; pre-war equalization of, 206-207; pre-war, lower on acceptances, 204; pre-war, preferential rates on commercial paper of shorter maturities, 204; pre-war to rule above market rates, 198; proposal for uniform over United States, 491-493; proposal to limit to 5%, 486-491; reductions in 1921 consideration of 399-400; should be determined by price changes, 523-528; should not be deter-

Federal Reserve Banks (*continued*) mined by reserve percentage, 518-522; special, on ten-day paper before April 1917, 213-214; to accommodate business, discussion of, 132; charged on commercial paper before April 1917, statistical summary of, 210; and business activity, 529; and Federal Advisory Council, 132-133; and foreign exchanges, 522-523; and market rates, relation of, 394-399, 528-529; and price of Liberty bonds, Sen. Owen on, 481-482

Federal Reserve Banks, bankers' acceptances, abuses in use of before April 1917, 238-240; growth of dollar draft in 1915-1917, 237; inter-district purchases of in war period, 300-301; maturities of in 1915 and 1916, 236; policy towards in war period, 300; statistics of purchases of by Federal Reserve Banks, in 1915 and 1916, 235-236; support given by Federal Reserve Banks before 1917, 237-238

Federal Reserve Banks, bonds, government, investments in before April 1917, 232; bonds government, must use discretion in buying, 232-233

Federal Reserve Banks, commercial paper rediscounted before April 1917 not sufficiently scrutinized, 245-246; commercial paper, scrutiny of by Federal Reserve Banks and price cycle, 533-534

Federal Reserve Banks, credit curves of, 452-454; credit functions of as outlined by Federal Reserve Board, 199-200; credits, control of commercial during war period, 310-312

Federal Reserve Banks, commodity paper, reasons for small amount discounted by Federal Reserve Banks, 221-222; statistics of discounts of at Federal Reserve Banks, 221

Federal Reserve Banks, commodity rates, established by Federal Reserve Banks, 219; in effect at Federal Reserve Banks, 220; reasons alleged for, 218; and Secretary of Treasury, 218-219; harm resulting from, 222

Federal Reserve Banks, criticisms of in deflation period, 471-484

Federal Reserve Banks, deposits in southern Federal Reserve Banks by McAdoo incident on establishment of commodity rates, 220

Federal Reserve Banks, discount market, obstacles in way of development of, 233-234

Federal Reserve Banks, discount operations, date on which rediscounts of each Federal Reserve Bank at maximum, 410-411; during war, conclusions to be drawn from, 294-295; in 1917 and 1918, statistics of, 294-5; of by months, 1920-1923, 414-415; of Federal Reserve Banks after armistice, importance of, 451-452; of in 1919, statistics of, 326-328; summary of pre-war, 228

Federal Reserve Banks, discount policy, compelled to co-operate with Government in 1919, 320; criticism of, 377; valuation of pre-war policy, 242-248; fundamental propositions governing, 537-538; pre-war formulation of, 197-198; in deflation period, 389; has not yet been developed, 509-510; in 1919-1920, lack of uniformity in between Federal Reserve Banks prior to April 1917, 243-245; summary of pre-war, 207-208

Federal Reserve Banks, discounted bills, 1920-1922 maturity of, 424; by each Federal Reserve Bank 1920-1922, 420-421; by

Federal Reserve Banks (*continued*)
months, Jan. 1919-May 1920, 328; for state and national banks 1920-1922, 421-422; before April 1917, by small member banks, 209; for non-members in war period, 297
Federal Reserve Banks, discounts in 1920-1922 by geographic divisions, 422-423; of trade acceptances in 1915-1916 and 1917, 225-226; pre-war, heaviest in southern Federal Reserve districts, 212-213; pre-war, high in December 1916 and in Feb. and Mar. 1917, reasons for, 211
Federal Reserve Banks, eligible paper, bankers' acceptances eligible for rediscount, 165-167; closer scrutiny of as remedy for inflation, 362-363; importance of definition of, 137 note ♯14; relaxations in requirements in war period, 298 for non-members, 425-426; foreign branches of, 168; freed from Treasury domination in January 1920, 367; gold and gold certificates, issuance of when prices are rising, 534-535; government deposits and price cycle, 535; inter-district rediscounting in war period, 300-301; rediscounting in 1919, 331-334; rediscounting statistics of, 1920-1922, 426-437; rediscounting policies Federal Reserve Banks should follow, 436-437;
Federal Reserve Banks, member banks, number rediscounting monthly before war, 228-229; number rediscounting in war period, 295-297; number rediscounting, from January 1919-May 1920, 328; from May 1920-December 1922, 424-425
Federal Reserve Banks, moral pressure, use of in controlling Bank rate, 532-533
Federal Reserve Banks, municipal warrants, purchases of by
Federal Reserve Banks (*continued*)
Federal Reserve Banks before April 1917, reasons for, 230; municipal warrants, purchases of by Federal Reserve Banks, before April 1917, statistics of, 230-232; during war period, 299, from 1919-1920, 329, from 1921-1922, 440
Federal Reserve Banks, not an emergency system, 199, 536-537
Federal Reserve Banks, open-market operations, before April 1917, 230; importance of, prior to April 1917, 241-242; during war period, conclusions to be drawn from, 299; in 1919, criticism of, 330-33; January 1919-May 1920 statistics of, 329-331; during war period statistics of, 298-300; reasons for entering before April 1917, 242; regulations governing purchases of bankers' acceptances, 169-171, regulations governing purchase of government bonds, 171; regulations governing purchase of municipal warrants, 171-173; regulations governing purchases of bankers' acceptances, 169-171; of Federal Reserve Banks and price cycle, 533
Federal Reserve Banks, open-market policies, statement of, 507-508, note ♯221
Federal Reserve Banks, policies and political influence, 537; organization committee determined to open in spite of European war, 197; policies in deflation period, evaluation of, 505-507; policy in price increase of 1922-1923, 503-505; precedents, dangerous, established by before April 1917, 246; preparations for war, 251; problems confronting, 510-511; progressive rates of discount abandonment of, 404 ff; progressive rates should have been applied generally, 409-410; rate control, could not exercise in

Federal Reserve Banks (*continued*)
1919, 320-322; rates should have been raised in January 1920, 379-380; reasons for light discounting before April, 1917, 209; relation between policies and rise in prices before April 1917, 246-248; reserves, penalties for deficient, 133-134; reserve percentage of, actual, in 1919, 333; reserve percentage of, adjusted, in 1919, 333; reserve percentage of in 1919 discussion of, 334-335; reserve ratio not good guide for credit policy, 520-521; resources of southern Federal Reserve Banks tested most severely before April 1917, 229; services rendered by before April 1917, 243; salaries, criticisms of, 480; suggestions offered to improve, 511-517; theory of bankers' acceptances, 238-239; theory of rediscounting, 137-8; to be impartial in rediscounting, 138; uniform policies needed in purchase of bankers' acceptances by Federal Reserve Banks, 241; war-discount policy of, 275-276

Federal Reserve Bank of Boston, classification of eligible paper at on January 1, 1917, 205

Federal Reserve Bank of Minneapolis on influence of Bank rate, 401, note ‡27; on uniform Bank rate, 493-494

Federal Reserve Bank of New York, fluctuations in Bank rates, before 1917, 202; changes in Bank rate during war period, 285-286; Bank rate changes in 1919-1920 compared with changes in Bank of England official discount rate, 324-325; Bank rate, course of during fluctuations in from 1921-1924, 390; credits, non-essential, attitude on, 356-357; index of production, 185; on efficacy of Bank rate, 461-462; moral pressure, use of by, 355-356; warnings, issuance of in 1919, 353-354

Federal Reserve Banks and agriculturalists, pre-war discount policy of Federal Reserve Banks shaped to favor, 245; and business depression, 536; and call loan rates, 482-483; and crisis, 411-412; 535-536; and Federal Intermediate Credit Banks, discounts for, 157; and member bank complex, 246; and profiteering, 480; and rising prices, policies during, 530; and speculation, 476-477; and the farmer, 475-476

Federal Reserve Board, advances, definition of, 158; approved of impounding of gold in war time, 266-267; capital issues committee of, details of organization and administration, 307-308; credit non-essential, policy towards curtailment of, and effect of, 356-358; credit rationing, in 1919-1920 attitude towards, 359-360; credit and prices, theory of relationship, 343-348; deflation committed to policy of, 348-351; deflation, orderly, policy towards in 1919-1920, 358-359; draft, definition of, 155

Federal Reserve Board, eligible paper, agricultural paper, definition of, 156-157; bill of exchange, definition of, 155; circular letter No. 13, contents of, 151-152; latest rulings on, 153-154; promissory notes, definition of, 155; trade acceptance, definition of, 155

Federal Reserve Board, interdistrict rediscounting, 1919, policy of, 331; may impose interest charges on Federal Reserve notes, 134-137; on efficacy of Bank rate, 455-466; plan suggested by for preventing prewar inflation, 190-191; power over Bank rate, 131; price theories of, 336-343; price theories

Federal Reserve Board (*continued*) and discount policies of, 348; problems in definition of eligible paper, 150-151; publicity fund of, charges of, 481; rulings, latest, on eligible paper, 153-154; rulings and regulations, 149-151; simplification of classification of eligible paper in 1917, 205; suggestions made to Federal Reserve Banks regarding credit policies, 200-201; theories of, inconsistencies in, 462-463; war paper, attitude towards driving from portfolios of Reserve Banks and member banks, 360; warnings issuance of through 1919 and effect of, 352-355
Federal Reserve Bulletin, plan for post-war financial reconstruction, 364; on efficacy of Bank rate, 455-466
Federal Reserve notes, alterations made in issue of to assist in impounding of gold, 265-266; Federal Reserve Board may charge interest on, 134-137; making a place for by Treasury Department, 266; manner of issue before June, 1917, 189, note ‡ 40; should not be issued against government obligations, 512; suggestions for controlling issuance of in 1919-1920, 360-362
Federal Reserve notes and prices, theories of Federal Reserve Board, 338-343
Federal Reserve officials, opinions regarding efficacy of Bank rate, 455-466
Federal Reserve System investigations of, 484
Federal Reserve System and Iowa, 479
Fiscal functions, importance of in central banking, 249-250
Fisher, Irving, Bank rates of Federal Reserve Banks, 528
Fluctuations, reasons for in Bank rate, 46-47
Foreign bill policy, advantages of, 76; discussed, 73-76; modus-operandi of, 75-76
Foreign drains, influence on bank rate, 49-52; reasons for, 50-51
Foreign exchanges, as determinant of Federal Reserve Bank rates, 522-523; reasons for demoralization in fall of 1914, 176-178
Foreign trade of the United States, indices of by groups of commodities, 1914-1917, 183; statistics of, 1914-1917, 182-183
Forgan, James B., on efficacy of Bank rate, 467
Fowler Bill, 1908, abstract of, 581-583; discussion of, 104
Fowler's proposals for banking reform, 103
France, seasonal variations in the note circulation, Bank and market rates, 94-96
Friday, David, Federal Reserve Banks and call loan rates, 483
Frozen credits, liquidation of, 416-419

Gephart, W. F. Dr., Bank rate and prices, relation of, 527-528
Germany, bank rate and seasonal variations, 92-94
Glass Bill, ability of to exercise credit control, 120-122; acceptance provisions of compared with those in Aldrich Plan, 117-120; congressional hearings on, 109-110; discount provisions of compared with discount provisions in Aldrich Plan, 111-115; discussions in Congress on, 108-110; in Senate, 122-123; not a copy of Aldrich Plan, 110-111; open-market powers provided for in, 120; provision for redemption of Federal Reserve notes, 124, note ‡ 51; provisions governing Bank rate compared with like provisions in Aldrich Plan, 111-113; provisions of in respect to eligible paper compared with like provisions in Aldrich Plan, 113-114; reserves

Glass Bill (*continued*)
against Federal Reserve notes, 124, note ‡ 52
Glass, Carter on proposals to limit Bank rate to 5%, 491; price theories of, 342
Gold, "earmarking" of controlled by Federal Reserve Banks in war, 271-272; exports and imports of the United States, January 1919-May 1920, 334; fear in America that Japanese crisis would lead to withdrawals 384, impounding in Federal Reserve Banks, 264-266; impounding of in Europe in war time, 252; impounding the gold of non-member state banks, 263-264; reasons for central banks emphasis on in war time, 269
Gold bonus, McFadden bill, 274-275; proposals, criticism of, 275
Gold Bullion Report, 8-9
Gold certificates, paid out by Federal Reserve Banks, 1922-1924, 504-505
Gold embargo, levying of in America not justified, 270-271; movements of gold during, 272-273; official justification of, 268-269; proclamation of September 7, 1917, 268; regulations covering shipments through Post Office department during war, 272; restrictions placed on gold manufactures by War Trade Board, 272; termination of, 273
Gold Exchange Fund, 1914, 178-179
Gold exports, checking by redeeming bank notes solely at main office of central bank, 71-72; prevented by "moral" pressure, 72-73; preventing of by redemption of notes and deposit liabilities of central banks in light weight coins, 72
Gold imports, interest-free advances on, 65-67
Gold imports and exports, United States, 1914-1917, 185-187; since 1921, 417-419
Gold policy of United States in impounding gold during war, 252-253; criticism of, 275
Gold premium policy, active, 65-66; described, 65; passive, description of, 67-68
Gold production, declared an essential industry by War Industries Board, 273
Gold standard, abandonment of in America 267-269
Gold stock, in Federal Reserve Banks, 187, note ‡ 32; in United States, 1915-1921, 187, note ‡ 32
Government's financial operations responsible for increases in money and credit in 1919, 317-318
Government obligations floated in 1919, statistics of, 319-320

Harding, President, and deflation, 473-474
Harding, W. P. G., attitude on commodity rates, 222, note ‡ 117; charges of speculation in cotton, 479-480; Federal Reserve notes and prices, theories expressed by, 338-340; Federal Reserve rediscount rates and prices, 524; ideas on pre-war inflation, 188; impounding of gold, 267; making paper of long maturities eligible, 499-500; mistake of Federal Reserve Banks in maintaining Bank rates low during war, 282-283; on efficacy of Bank rate, 463-465; on dirt farmer amendment, 495-496; on proposal to limit Bank rate to 5%, 487-491; on uniform Bank rate, 492
Hawtrey, R. G., on efficacy of Bank rate, 469-470
Heflin, Sen., charges that Federal Reserve Banks had publicity fund, 481
Helfferich, Karl, studies regarding averages of Bank rates, 40-41
Hepburn, A. B., statement on gov-

Hepburn (*continued*)
ernment's policy in floating bonds, 293, note ‡133
Hitchcock Bill, discount provisions of, 124-128; provision for redemption of Federal Reserve notes, 124, note ‡51; reserves of Federal Reserve Banks against notes and deposits, 124, note ‡52

Indianapolis Monetary Commission, plan for banking reform, abstract of, 580-581; discussion of, 102-103
Inflation, during war, measures taken by government to combat, 301; pre-war, plans suggested for prevention of, 188-191; recrudescence of in U. S. in 1922-1923, 502-505
Inter-district rediscounting in 1919, 331-334; in 1920 and 1921, 426-437; policies Federal Reserve Banks should follow, 436-437; provisions of Federal Reserve Act governing, 148-149; theory of, 128; see, also, Federal Reserve Banks
Interest rates, statistics of 1913-1917, 194

Japan, Bank rate in during crisis, 383; closing of stock exchanges in, 383-384; collapse of silk market in, 383; exports and imports of silver and gold, 382; interest rates in, 383; lesson of crisis not lost in America, 384; statistics of wholesale prices, and note circulation, deposits and reserves of Bank of Japan, 382
Japanese crisis of 1920, 381-384
Joint Commission of Agricultural Inquiry, report of, 475-476

Kane, Thomas P., on liberality of Federal Reserve Banks, 413-414
Kemmerer, index of production, 185
Kenyon, Senator, on dirt farmer amendment, 496
Kenyon (*continued*)
King, Representative, on inflation and Federal Reserve System, 351
King, W. I., Bank rate of Federal Reserve Bank, and prices, 528; index of production, 185

Leffingwell, R. C., defence of "payment by credit," 289, note ‡118
Liberty bonds, consequence of floating at higher rates, 277-278; effects of "borrow and buy" program, 292-293; holdings by National Banks 1917, 292; inflationary effects of sale of, 290-291; interest paid on, 276-277; method of sale, 290-291; should have been floated at higher rates, 277-278; statistics of holdings by reporting member banks, 291-292
Liberty bonds and Bank rates, Senator Owen's charges, 481-482
Lombard loans, at Bank of England, 32-33; at Reichsbank, 37; discriminatory rates on, reasons for, 43-44; policy of European central banks toward, 41; provided for in Aldrich Plan, 114-115

Manufacturer's Record and deflation, 474-475
Market rates, definition of, 394-399; expedients used in Europe in forcing up, 59-61; influence on by Bank rate, 400-402
McAdoo, deposits with Federal Reserve Banks, 218-220; urges commodity rates, 218-219
McCormick resolution on inflation, 350, 473
McFadden gold bonus bill, 274; opposition to, 274-275
McLean, Senator, on dirt farmer amendment, 498
Member bank complex, 246
Member banks, as agent, 147; credit curves of, 452-454; lowering of reserve requirements of

Member Banks (*continued*)
June 21, 1917, 253-254; number rediscounting in 1920-1922, 424-425; number of rediscounting during war, 295-297; rediscounts for non-members in war period, 297; reporting, member banks, holdings of war paper, 1919-1920, 325-326; reporting increases in investments, loans and discounts in 1922, 503; reserves of, suggested modifications in, 511-512; statistics of holdings of liberty bonds by, 291-292; suggestion that larger membership is needed, 516-517; see, also, Federal Reserve Banks
Merchant marine, American, statistics of, 1914-1917, 184
Mill, J. S., comment on Bank of England's policy during crisis of 1857, 28-29
Miller, A. C., suggestion regarding reserves of Federal Reserve Banks, 514-515
Miller, Gov., collateral demanded by Federal Reserve Bank of Kansas City, 478-479; discount operations of Federal Reserve Banks and crisis, 412
Mitchell, W. C., on efficacy of Federal Reserve Bank rate, 467; index of production, 185
Money, increase in in 1919, due to governments financial operations, 317-318; increase of amount in circulation, 1913-1917, 194-195; in U. S., ratio of to deposits, 135-136
Moral pressure, as device for preventing gold exports, 72-73; suggested use of by Federal Reserve Banks to control price cycle, 532-533; use of by Federal Reserve System, 355-356
Moulton, H. G., on efficacy of Bank rate, 468
Municipal warrants, purchase of by Federal Reserve Banks before April 1917, statistics of, 230-231; purchases of in 1919, 329-330; purchases of by Federal Reserve Banks, 1920-1923, 438-439; reasons for light purchases in first quarter of 1917, 230-232; reasons for purchases of by Federal Reserve Banks before April 1917, 230; regulations governing purchase of by Federal Reserve Banks, 171-173; see, also, Federal Reserve Banks (open-market operations)

National Banks, holdings of government securities, 292
National Bank Act, amended to permit larger loans on war paper, 297-298
National Banking System, defects in, 100-101; effects at reform, 101-103
National Monetary Commission, 106
New York Stock Exchange, closed in 1914, 177; rationing of credit on, purpose of in war period, 305-306
Non-member banks, discounts for, 425-426
Norris, Senator, on dirt farmer amendment, 497-498

Open Market operations of Federal Reserve Banks, during war period, conclusions to be drawn from, 299; criticism of, in 1919, 330-331; importance of prior to April 1917, 241-242; municipal warrants, regulations governing purchase of, 171-173; provisions of Act as amended by Agricultural Credits Act, 169; reasons prompting them going in open-market before April 1917, 242; regulations governing purchase of bankers' acceptances in open-market, 169-171; regulations governing purchases of government bonds, 171; relation of to price cycle, 533; statistics of before April 1917, 230-232; statistics of during war period,

Open Market (*continued*)
298-300; statistics of from January 1919-May 1920, 329-331; statistics of from 1920-1923, 437-442; see, also, bankers' acceptances, government bonds, municipal warrants and Federal Reserve Banks
Open-market policies, statement of by Federal Reserve Banks, 507-508, note ‡221
Open-market powers, as provided for in Aldrich Plan, 120; as provided for in Glass Bill, 120; of Federal Reserve Banks, provisions of original Federal Reserve Act, 167-8
Owen Bill, discount provisions of, 124-128; provision for redemption of Federal Reserve notes, 124, note ‡51; reserves of Reserve Banks against notes and deposits, 124, note ‡52
Owen, Senator, on Bank rate and price of Liberty bonds, 481-482

Palgrave, statistical studies of fluctuations in Bank rate, 37-38; quoted, Bank rate in England and reserve percentage, 518-519
Panic, averted in 1920 due to Federal Reserve Banks, 386-387; policy of central banks in, 88
Passive gold premium policy, amount charged by Bank of France, 68; disadvantages of, 69-70; reasons for adoption by Bank of France, 70-71
Patterson, E. M., rates borne by government obligations, 321, note ‡36
Peel Act, 21-22; discount policy of Bank of England after passage, 22-23; suspension of in 1847, 26
Phelan Act, as applied in the Atlantic district, 372; as applied in the Dallas district, 374; as applied in the Kansas City district, 373-4; as applied in the St. Louis district, 373; criticism of details of, 376; debate in House of Representatives on, 370-371; discussion on in United States Senate, 371; illustration of application, 375-376; provisions of, 132, 368; reasons for, 367-368; statement on by House Committee on Banking and Currency, 369-370
Pitt, forces the Bank of England to suspend, 2
Price, increase of 1922-1923, action of Federal Reserve System in, 503-505
Price cycle, and Bank rate at Federal Reserve Banks, 530-532; relationship of, 82-83; and government deposits, 535; and moral pressure, 532-533; and open-market operations, 533; and scrutiny of commercial paper, 533-4; and use of gold and gold certificates in the United States, 534-535; and warnings, 532
Price fixing in war time, agencies for, 302; criticism of, 303-304; fluctuations in controlled and uncontrolled prices, 303-304; measures of enforcement, 303; purpose of, 302-303
Price theories of Federal Reserve Board, 336-343; discount policies of, 347-348
Prices, fall in in 1920 world-wide, 381; falling, opposition to in the U. S., 471-473; in America, unevenness of price decline, 384; increases in 1922, 502; index numbers of, 1913-1917, 195; President Wilson's explanation of high prices in 1919-1920, 349-350; reason for pre-war advance in, 191; relation between pre-war discount policy of Federal Reserve Banks and, 246-248; and credit, Federal Reserve Board's explanation of, relationship of, 343-348; and

Prices (*continued*)
Federal Reserve Bank rate, 523-528
Private discount rate, description of, 61-62; in England and Germany, 62-64; reasons for adopting by central banks, 61-64
Production, statistics of increase in, 1914-1917, 184-185
Promissory notes, definition of by Federal Reserve Board, 155
Prosperity of period from 1914-1917, 196

Rationing of, comercial credits in war period, 310-312; investment credits during war period, 307-310
Redemption, of notes and deposit liabilities of central banks solely in light weight coins to prevent gold exports, 72; of notes of central banks solely at main office to prevent gold exports, 71-72
Rediscounting, theory of, 137-138
Rediscounting, inter-district theory of, 128
Reichsbank, alterations of Bank rate, 45-46; arithmetic mean of official discount rates, 40; average maturity of foreign bills of exchange, 1876-1910, 74-75; average private discount rate, 1880-1896, 63; domestic bills of exchange average duration of, 43; eligible paper at, 36-37; foreign bill policy, advantages of, 76; foreign bill policy, discussed, 74-76; holdings of foreign bills on December 30, 1912, 74; interest-free advances on gold imports at, 66-67; interest rates on imperial and state bonds, 42; interest rates on loans against securities and commodities, 42; Lombard loans, 37; average duration of, 43; classified according to security, 42; maximum and minimum Bank rates at since 1844, 44-45; mechanics of fixing Bank rate, 36; methods used to mop up funds in market, 60-61; official discount rates at, 42; private discount rate at, 62-64; private discount rate average days in force, 63; private discount rate, reasons for abandonment, 64; purchases of foreign bills of exchange, 1876-1910, 74-75; rate on Lombard loans, 37; reasons for increases in Bank rate, 1876-1910, 47; seasonal variations in note circulation, Bank and market rates, 92-94; use of moral pressure to prevent gold exports, 72-73; yield on bills of exchange discounted by, 41
Republican party and deflation, 473
Reserve Bank Organization Committee, 197
Reserves of national banks, reduction in in 1914, as cause for prewar rise in prices, 191-193; required to hold as provided for in original Federal Reserve Act, 192
Reserve percentage, not sole reason for changes in Bank rate, 48-49; of Federal Reserve Banks as determinant of Bank rate, 518-522
Reserve ratios, actual and adjusted of Federal Reserve Banks, 1920-1921, 433-434
Reserve requirements, of member banks, alterations suggested in, 260-261; amendment of June 21, 1917, 253-254; amendment of June 21, 1917, debate in Congress on, 254-257; amendments of June 21, 1917, purpose of, 254-256; lowered excessively by June 21, 1917, amendments, 260-261
Reserve requirements of national banks prior to 1914, 192; of original Federal Reserve Act funds released by, 193; of state banks, lowering of, in 1915, 193

Restriction Act, 1797, England, 3; provisions of, 3-4
Rich, John H., on discount operations of Federal Reserve Banks and crisis, 411-412
Rulings and Regulations of Federal Reserve Board, 149-151

Seasonal, drain and discount policy of central banks, 94-96; variations and Bank rate, relationship of, 88-96; variations in note circulation, Bank and market rates in France, 94-96; variations in note circulation, bank and market rates in Germany, 92-94
Secret meeting of May 18, 1920, 474-475
Securities, American, return of, 1914-1917, 187-188
Self-liquidating, defined, 44, note ‡ 55
Scrutiny, closer, of eligible paper as remedy for inflation, 362-363
Silk market, collapse of in Japan, 383
Smith, Senator, on Federal Reserve System, 472; remarks on Phelan Bill, 371
Snyder, Carl, suggestion to stabilize prices, 515
Speculation, correctives central reserve banks may employ, 85-86; in 1919, 315-317, and 379
Sprague, O. M. W., Bank rate of Federal Reserve Banks and prices, 526-527; on efficacy of Bank rate, 468; reserve ratio of Federal Reserve Banks not good guide for credit policy, 522
State Banks, growth of membership in Federal Reserve System, 263; impounding the gold of non-member state banks, 265-266; membership in Federal Reserve System made more attractive for, 262; reason Federal Reserve authorities induced to join, 261; reasons for failure to join Federal Reserve System before April, 1917, 261
Stewart, W. W., index of production, 185
Strong, Governor, desired to raise Bank rate at Federal Reserve Bank of New York early in 1919, 363-364; Federal Reserve rediscount rates and prices, 524; money committee of the New York Stock Exchange should have been continued, 306-307; opposition to Phelan Act, 371-372; on use of moral pressure by Federal Reserve Bank of New York, 355-356; on efficacy of Bank rate, 465-466
Supreme Economic Council, price theories of, 343, note ‡ 78
Swing, Representative, Federal Reserve System deflated farmer, 498-499

Trade acceptances, abolition of preferential rates on, 322; amount discounted by all Federal Reserve Banks in 1915-1917, 225-226; definition of by Federal Reserve Board, 155; developed slowly before America entered the war, 226-227; evils existing in practice before April 1917, 226-227; Federal Reserve Act framed to encourage, 223; Federal Reserve Bank of New York establishes first special rates on, 224; first regulations issued by Federal Reserve Board, 224; preferential rates on not justified, 227; rates of discount on at all Federal Reserve Banks during 1916 and 1917, 224-225, during war period, 287, from 1919-1920, 323, from 1920-1923, 390
Trade balance of the United States, in 1919, 318-319
Treasury domination, Federal Reserve Banks freed from, 367
Treasury's war finance policy, generally condemned, 277-278; prevented raising of Bank rates at

Federal Reserve Banks in 1919, 364-365

Unfunded trade balance of the United States in 1919, 318-319
United States, securities, purchases of 1914-1917, 232-233, purchases of during war, 299, purchases of June 1919-May 1920, 329-330; purchases of by Federal Reserve Banks, 1920-1923, 438-439; see, also, Federal Reserve Banks (open-market operations)
United States, statistics of foreign trade, 1914-17, 182-183

Vanderlip, on reasons for advance in prices in 1919-1920, 378
Velocity of circulating media, increase in prior to 1917, 193
Vreeland Bill, 1908, discussion of, 104; synopsis of, 583-585

Wade, Festus J., and cotton-loan fund, 180
War inflation, measures taken by Government to combat, 301
War finance, criticism of policies followed by American Government in, 312-313
War Finance Corporation Act, as amending Federal Reserve Act, 147-148; Capital Issues Committee of, 308-309
War paper, holdings of by commercial banks in 1919-1920, 325-326; policy of Federal Reserve Board in driving from portfolios of Reserve Banks and member banks, 360; rediscounts of as governed by Federal Reserve Act, 146-147
Warburg, Paul, plan suggested by for prevention of pre-war inflation, 188-189; suggestion made to improve the discount market, 515-516
Warnings, issuance of by Federal Reserve Board, in 1919, 352-355; issuance of by Federal Reserve Banks to control price cycle, 532
Williams, John Skelton, collateral demanded by Federal Reserve System, 477-478; commodity paper, 221-222; inflation of currency, theory of, 342; modifications in loans of Federal Reserve Banks, 513; on deflation, 474-475
Willis, H. Parker, criticism of closing of New York Stock Exchange in 1914, 177, note #5; on efficacy of Bank rate, 467-468
Wilson, Woodrow, statement on high prices, 349-350

Youngman, Anna, on efficacy of Bank rate, 469

DATE DUE

GAYLORD

PRINTED IN U.S.A.